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ELECTRIC RAILWAY TRACTION

A Supplement illustrating and describing developments in Electric Railway Traction is presented with every copy of this week's issue

Nationalisation ?

WHETHER the temporary Government control of the British railways will lead to their permanent administration as a State monopoly is a question discussed by the General Secretary of the National Union of Railwaymen in its organ *The Railway Review*. The trade unions have long advocated centralisation under Government control of transport and industry, and the General Secretary of the N.U.R. expresses the opinion that such control, "if it had been applied when motorised road transport began to develop, would have prevented the ruinous competition of road and rail transport and would have thus saved the financial and other difficulties affecting the railway companies." We have never been able to follow this line of argument, for the financial position of the railways in countries where nationalisation is established is not less acute than that of our own railways. The two states where both road and air transport are also controlled by the railway administration are South Africa and Hyderabad. When peace returns it is quite likely that there will be even closer co-ordination of railway facilities than in the past, and it is to be hoped that we may never return to the unsatisfactory conditions of internal warfare between the various forms of transport. The aim should be the development of transport in any form and to any extent required by the public, so that the best in quality and quantity may be offered. Nationalisation may be a means of achieving this end—it cannot be an end in itself—but,

whatever happens, the more widely administration is decentralised the more likely are individual initiative and sense of responsibility to be developed.

Transport Reserved Occupations

A provisional schedule of reserved occupations has been issued as a White Paper. Its purpose is to ensure that employees required for the maintenance of necessary production or essential services are not accepted for service in which their skill and experience will not be used. All transport workers, whether on rail or road, or canals or docks, are included in reserved occupations and so cannot be accepted for whole time service in any of the services of national defence if they are on or above a stated age. On railways, generally speaking, the stated age is 25 years but 30 years is the stated age for permanent-way maintenance and repair staff, for porters and goods checkers (except foremen and chargemen), for ticket collectors, for train, carriage, wagon, brake, &c., examiners, for crossing keepers, and for shunt-horse drivers. For steam engine fitters the stated age is 23 years, which also applies to men engaged in building and repairing railway vehicles, tramcars, buses, lorries, &c., with the exception of steel body builders, for whom the stated age is 21 years. Road transport (goods and passenger) workers come under the 25 years' rule, except goods loaders and porters, for whom the stated age is 30 years. For canal employees, other than hauling-horse drivers and maintenance workers, the stated age is 25 years, and for dock and harbour workers it ranges from 21 to 25 years except for light keepers. Scientific research workers, professional engineers, and works managers come under the 25 years rule.

The Week's Traffics

In view of the announcement of the Railway Executive Committee which we recorded last week, that the weekly traffic returns of the main-line railway companies and of the London Passenger Transport Board have been discontinued for the time being, we are naturally unable to continue in its familiar form our table of "British and Irish Traffic Returns." Similarly, our weekly editorial comment on the trend of receipts as compared with the previous year (and recently, also, as compared with the two previous years) must be discontinued. Control by the Minister of Transport through the Railway Executive Committee at present applies, however, only to Great Britain, and excludes the Liverpool Overhead Railway. We are therefore preparing a table of "Irish Railway Traffic Returns," the first of which will be found at page 386. This includes returns for all the railway undertakings of both Northern Ireland and Eire that our table has previously contained, and also those for the Northern Counties Committee of the L.M.S.R. That section of the L.M.S.R. undertaking remains outside Government control. Northern Ireland is, of course, at war with Germany, while Eire is neutral. The Liverpool Overhead Railway returns we propose to record in a news paragraph.

The London Transport Accounts

Although, in common with the main-line railways, the London Passenger Transport Board has discontinued the issue of weekly traffic returns, the accounts position of London Transport is different from that of the main-line railway companies, as its financial year ends on June 30. Thus, the annual accounting period 1938-39 was already ended two months before control by the Railway Executive Committee came into being. The full accounts of the London Passenger Transport Board are already in an advanced stage of preparation, and we understand that

the present intention is for these to be issued some time during October. The usual time of issue would be the first week of next month, but the preoccupation of the staff with other work will almost certainly result in delaying publication of the accounts for a week or two. There is a mild speculative interest in the final payment on the "C" stock. An interim payment of $1\frac{1}{2}$ per cent. per annum was made in February last (as recorded at page 247 of our February 10 issue), and the market feeling is that a final distribution of $2\frac{1}{2}$ per cent., making 4 per cent. for the year, is the most that can be expected. Failure once more to pay $5\frac{1}{2}$ per cent. would not have its previous significance, however, as action for the appointment of a receiver is impracticable while the undertaking of London Transport is controlled by the Minister of Transport.

* * * *

Railway Assessments

The recently-published annual report of the Railway Assessment Authority for the year ended March 31, 1939, deals mainly with the second railway valuation roll which assesses the net annual value of the four main-line companies in England and Wales for the quinquennial period 1936-41. Relevant accounting years for ascertaining the average net receipts for the second valuation roll are the years 1930 to 1934. These average net receipts are: for the Southern Railway £4,617,832; for the L.M.S.R. £10,335,651; for the Great Western Railway £5,384,358; and for the L.N.E.R. £8,238,739. A total decrease of £9,532,706 is shown in comparison with the previous accounting period of 1928-29. The Southern Railway portion of the second valuation roll was completed by the assessment authority on January 27, 1939, on the basis of a cumulo value of £1,150,000. Incidentally the authority decided that the company's toll bridges at Shoreham, Hayling Island, and Lymington were "railway hereditaments." Completion of the L.M.S.R. portion of the roll was effected on May 24, 1939, the cumulo value being entered at £1,500,000. The Great Western portion of the roll was not completed by the time the report was issued. In this case the agreed cumulo is £1,400,000. Completion of both this and of the L.N.E.R. portion are expected shortly, the L.N.E.R. agreed cumulo being £1,100,000.

* * * *

"The Splendid Traditions of the Transport Services"

The prompt evacuation of women and children in the first few days of September, from what were so soon to become danger areas, was not only a triumph of organisation but also a remarkable feat of execution. The thanks due to all grades of transport workers were voiced on September 4 in a broadcast by Captain Euan Wallace, Minister of Transport, who said he wanted to take the first possible opportunity of expressing keen appreciation of the splendid services rendered to the nation by all the grades of the main-line railways and the railways of the London Passenger Transport Board, in not only planning and carrying through successfully and without a hitch the evacuation movement, but at the same time providing many other essential transport requirements. Equally he thanked all those who had planned and operated the movements by road—whether as part of London Transport or in the provinces. "The unsparing service, cheerfully given, to our country in this crisis by rail and road transport, by the managements, the clerical staffs, and the operating grades is beyond all praise, and is in keeping with the splendid traditions of the transport services," added Captain Wallace. An evacuation scheme of this size inevitably means sadness and bewilderment to many people, and the human understanding of the railway porter and the bus conductor was of more help to mother

and child than they themselves can possibly have realised. "Transport men," concluded the Minister of Transport, "are entitled to be proud of the blow they have already struck in the country's cause."

* * * *

Reduced Passenger Train Services

With the exception of the evacuation operations, which in fact, were pre-war and temporary movements, the travelling public in general began its first experience of war-time railway transport last week-end. The effect was much greater than many persons expected, and within the first day or two it was not surprising to find some complaints in the daily press. The Railway Executive Committee on Tuesday issued an official statement regretting very greatly the inconvenience which had been caused to the travelling public by the reduction of train services brought into force on Monday. It asked for the forbearance of the public in the matter. The statement explained that the railways have a very heavy freight and military traffic to deal with which is of an urgent and exceptional character. They have to carry on their night working, when freight service is mostly handled, under exceptionally difficult lighting conditions. It is essential for the welfare of the country that freight and military traffic should be punctually and efficiently handled. Subject to this the railway companies are doing and will do everything they can to give the public the best passenger service that is within their power. Each company is watching the situation from day to day and will put on such extra trains as working conditions permit. The railways have no desire to limit passenger travel, but they are bound to give first place to traffic of an urgent national character.

* * * *

Export Trade

Mr. Oliver Stanley, President of the Board of Trade, replying to a question in the House the other day as to whether encouragement could be given to merchants and manufacturers to maintain the export trade, especially to the Dominions, so as to enable us to pay for our necessary imports, emphasised the importance the Government attaches to the maintenance of the export trade at the present time. The Government, he said, would use every effort to ensure that the country's exporting capacity was used to the best advantage consistently with the satisfaction of essential home requirements and overriding war needs. This question of export trade is closely allied to what has often been called "economic warfare," but Mr. Stanley's statement was in reply to a question which specified the necessity to maintain the export trade to enable this country to pay for necessary imports, and had no reference to the pressing of exports in excess of imports which constitutes economic warfare as practised in times of military peace. If, as President Wilson once remarked, the roots of modern war are economic, the extremities of armed conflict aided by science might even yet be avoided by applying a means to abolish the underlying cause.

* * * *

Signalling Progress in Sweden

Although for many years the signalling methods and equipment used on the Swedish railways were based on German or—as some would prefer to call them—Central European standards, for some time past now a strong tendency towards American principles has been apparent, and has borne fruit in many excellent power and automatic signalling installations, which use colour-light signals for running movements and position-light signals for shunting, or, in many cases, for running movements in station

limits. The trailability of points has, however, been retained, thus combining some of the older principles with the new, but the point indicators formerly seen have, of course, disappeared in the modern system where all movements are directed by fixed signals. It is not only the State Railway system which has adopted these improvements. The private lines have adopted them, too, and it is interesting to see that the C.T.C. idea has found favour with at least one of them, as shown by the brief article on page 376, where an illustration appears of a control panel now in service on the Stockholm-Saltsjön Railway. The successful application of these ideas in the U.S.A., and now, to a small extent also, in Europe, is well known, and we should imagine that conditions in many parts of the Scandinavian countries much favoured the use of these long-distance power signal systems—for one thing, power to operate them is generally readily obtainable, and traffic does not justify large signalling staffs along the line.

* * * *

Corrosion in Locomotive Boilers

The form taken by corrosion in a locomotive boiler varies considerably and is, no doubt, dependent on the characteristics of the waters evaporated in the boiler, the materials used in its construction, and the type and duty of the locomotive. Research has revealed that the most important factor in corrosion is dissolved oxygen, and steps should therefore be taken to reduce this to a minimum. Experience has shown that much of the oxygen can be removed by the use of top feed systems or the open type of feed-water heater. The former device is nowadays largely used on many railways and has proved highly efficacious in reducing corrosion in locomotive boilers. In referring to this aspect of the subject in his paper to the Institution of Locomotive Engineers on "Treatment of Locomotive Feed Water," Mr. D. B. H. Pinchen stated that boiler corrosion, including pitting and ringing, could be prevented by the maintenance of a certain minimum concentration of sodium-hydroxide in the boiler water. It is of interest in this connection to note that, as the author himself pointed out, the American Railway Engineering Association advises that corrosion can be prevented if the sodium-hydroxide content of the boiler water is maintained at from 10 to 15 per cent. of the sum of the sodium-chloride and sodium-sulphate salts present.

* * * *

Bristol to Exeter—1939

Circumstances have put a swift end to the first season of Great Western & Southern Air Lines. We are glad we seized an opportunity while there was yet time of flying in one of the company's machines from Bristol to Exeter, and of seeing at many West Country railway stations what must have been the first posters to advertise a cheap day excursion by air. When we presented ourselves at Bristol airport, a smiling pilot said he would go and fetch "the old barrel," and in the aircraft thus irreverently described we were soon heading westward, carrying into the sky some earthly memories in the shape of advertisements for somebody's gin on the cabin walls. Our track lay across the Mendips at Cheddar, and then on to Bridgewater. Soon the flyover where the G.W.R. Westbury and Bristol routes to the West converge was conspicuous beneath us, marking our approach to Taunton. The Wellington monument—so prominent from the train—was no more than a magnified needle as we crossed the Blackdown hills and sank gently over Whimple station to alight at Exeter. We must cherish these memories of days when an unidentified aircraft in the evening light did not set the sirens shrieking.

The Home Front, 1914-1939

Those old enough to remember the first weeks of the 1914-19 war, cannot fail to be struck by the difference between the "home front" then and what it is today in the opening stages of Hitler's war. Then the cry was "business as usual." Conscription was not introduced until May, 1916. Except for a temporary closing for public traffic of certain lines of railway, the reason for which was revealed by the subsequent announcement that the Expeditionary Forces had been safely landed in France, railways continued to function much as usual. Dining cars continued to run for nearly two years, and the former Midland Railway maintained its restaurant car services throughout the war. Aerial warfare was an unknown factor, and consequently there were no such things as A.R.P., evacuation schemes, air raid shelters, or "black-outs." Our war efforts started slowly with a gradually increasing momentum with its concomitant of new Ministries, Government Departments, and Boards, which did not reach their zenith until the spring of 1918. The "home front" is very different today. Based on previous experience, all these no doubt necessary controls have begun to function at once. Already we have three new Ministries, 42 Acts of Parliament, and 15 Boards of Control.

* * * *

Industrial Development

NO one who has travelled through the suburbs of the Metropolis can fail to have been impressed with the widespread industrial developments which have taken place in recent years on land adjacent to the railways. The same feature is also noticeable on the outskirts of many provincial towns. This remarkable transformation is due largely to the activities of the railway companies who have been making strenuous efforts for some years to secure the establishment of new works and factories on sites situated on or adjacent to railway property. They have lost no opportunity of reminding manufacturers that the placing of new works alongside railways ensures that the most efficient and comprehensive transport service is always available. Moreover, the provision of private siding facilities enables traders to secure the appreciable reduction in conveyance rates incidental to traffic charged at private siding rates. While the erection of factories on land owned by the railway companies does not necessarily mean that the whole of the traffic is thereafter conveyed by railway, the potential business to be secured has caused the companies' development and estate departments to collaborate in taking special measures for the greater utilisation of sites on their property for factories and works. These development departments have assembled and maintain complete and up-to-date registers of sites available on their systems for this purpose; comprehensive lists are also kept of existing factories which are available for sale or letting in the territory served by their line.

Manufacturers and others desiring to change the locality of their works or open new factories naturally require the most detailed and reliable particulars covering a wide range of subjects to enable them to decide upon the most advantageous position, and the British railways have so developed this side of their business that they are usually able to satisfy the most exacting requirements. Authentic information as to local rates, availability of gas, electricity and water supplies, and the charges therefor, the quantity and type of labour available, the nature of the housing accommodation available for workpeople, the accessibility to markets and the sources from which raw materials can be drawn, is readily available. Experienced railway representatives have been appointed for the purpose of discuss-

ing projects of this nature with industrialists and then conducting them over selected sites and properties for the purpose of determining their suitability for requirements; all the arrangements are naturally conducted in the strictest confidence. Information is frequently supplied as to the nature of the soil, the humidity of the air, methods for the disposal of effluent, and many other points. Indeed, there is practically no limit to the amount of information on any aspect of industrial development which the railway companies are ready to place at the disposal of interested traders without any charge or obligation. Expert advice is also readily proffered on such matters as the most advantageous and economic lay-out of private sidings, buildings and any transport problems which may arise.

Belgian Light Railways

THE Société Nationale des Chemins de fer Vicinaux, which has since 1885 provided Belgium with an efficient and economical system of light railways, held its own remarkably well during 1938 considering the unfavourable conditions prevailing. There was an increase in receipts, but the further progress which should have resulted from the improved facilities afforded, was checked by the general slackening of commercial activity, by the international situation arising in the third quarter of the year, and by weather conditions which reduced excursion and tourist travel. Expenses were increased to the extent of 8 per cent. by higher cost of living allowances, and by rises in the prices of materials, and of electric current, notwithstanding real economies in operation. Gross receipts advanced by fr. 14,846,715 or 5.45 per cent.

Electrically worked sections have increased from 1,421 to 1,454 km., and the operating ratio thereon has risen from 94.37 per cent. in 1937 to 96.73 per cent. in 1938. Electric service passengers increased from 159,506,261 to 167,601,357, and electric service receipts increased by fr. 13,179,176 or 7.08 per cent. These receipts represented in 1938 69.34 per cent. and in 1937 68.28 per cent., of the total earnings of the system. On the other hand the increase in electric train-kilometres was 2,170,748 or 4.76 per cent., and the increase in expenses was fr. 17,135,594 or 9.76 per cent. The steam or railcar operated lines in 1938 totalled 3,354 km., against 3,376 km. in 1937. Steam service passengers declined from 3,140,228 in 1937 to 1,801,825 in 1938, and railcar passengers from 20,008,832 to 17,844,666, but bus passengers advanced from 4,788,327 to 5,670,336. Receipts from these three classes of passengers advanced by fr. 1,667,540 or 1.93 per cent., and the operating ratio on the steam and railcar lines has risen from 106.91 per cent. to 110.15 per cent. The accompanying table gives some operating figures for the whole system:—

	1937	1938
Total passengers	187,973,898	193,573,830
Goods traffic, tons	4,082,583	4,174,171
Kilometres operated	4,797	4,808
Train-kilometres	65,767,259	68,204,260
Operating ratio, per cent. ..	98.35	100.84
	Fr. (Belg.)	Fr. (Belg.)
Passenger receipts	224,691,835	236,692,256
Merchandise receipts	43,176,509	44,900,116
Gross receipts	272,390,717	287,237,432
Expenditure	267,883,660	289,656,407
Net receipts	4,507,057	Dr. 2,418,975

Apart from three lines in Limburg on which the losses (fr. 157,168) were made good by the public authorities who hold shares in those lines, 81 lines showed losses amounting to fr. 10,346,108 in 1938, compared with 62 lines showing losses of fr. 6,815,363 in 1937. Lines showing a profit on working were 83 in 1938, with total profits of fr. 11,837,593, compared with 104 lines showing total

profits of fr. 16,249,943 in 1937. The average rate of dividend paid in 1938 was 1.1007 per cent., against 1.4929 per cent. in 1937. The number of railcar units in operation at the end of 1938 was 279. Twenty-four diesel cars were put in service during the year, and 45 electric motor coaches, ordered in 1937, are in use. The steam stock now includes 480 locomotives, 1,436 carriages, 2,199 covered wagons, 7,410 open wagons, 715 flat wagons, and 168 special wagons.

* * * *

The U.S.A. Road-Rail Problem

UNDER the heading "Tomorrow's Railroad Problem" our American contemporary the *Railroad Magazine* discusses the complex question of road v. rail in the U.S.A. America, says our contemporary, spends an astonishingly large proportion of the "national income" on transportation—more than 35 per cent., to put it conservatively—and an inordinately large share of this goes in paying for road transport, in one form or another. The proportion has increased rapidly and the increase is due to the development of highways. The highway industry is still growing, if the reckless pouring of public funds into roads may be dignified by the word growth. And where is it to stop? If highway transport were the cheapest form of land transportation it might be a sound policy, but it is not. The railroads are hauling two-thirds of the freight at an average cost of less than a cent a ton-mile. This information about competing road transport is not available, but the average road haulier ought to get at least two and a half cents, if he is to make a profit. Obviously, therefore, the road hauliers cannot continue to encroach on railway business, even with an unlimited and enormous further expenditure on roads, and the nation cannot afford to abandon, or even neglect, its cheapest and most efficient form of conveyance. Actually in the U.S.A., as in other countries, the case is that the highways paid for by taxes on private cars, are being used as a place of business by commercial vehicles. In the opinion of the *Railroad Magazine*, the railway companies have not employed these facts and other data at their disposal as effectively as they might. Their publicity efforts are regarded as poor compared with those of the automobile industry. And yet it is estimated that there is every sign that America may own thirty-five million motor vehicles within a decade or two.

Such, in a few of its many aspects, according to our contemporary, is a phase of the railroad problem that has not been stressed very heavily but which cannot be ignored, and its summing up is as follows: "Because the nation has grown to regard personal transportation as a necessary luxury, it cannot hamstring the giant that performs the bulk of the heavy movement of materials, produce and mine products. The way to avoid doing so is extremely simple: put the highway industry on the same basis as the railroad industry. The matter is not one of fair play alone; it is a matter of the well-being of the whole nation. And if the motor industry is unmoved by such altruistic concepts as the future well-being of America, let it ponder these solemn thoughts: (1) its own future depends on increased production of things other than motorcars; (2) prolonged intensification of the railroad problem will mean Government ownership; (3) Government ownership probably will mean either the end of Government favoritism towards the highway industry, or equal Government subsidies to railroads. It is difficult to see how the last solution could be anything but calamitous. Yet it is no more so than the prospect of a railroad industry crippled beyond repair by favoritism towards a transportation service vastly less efficient."

PUBLICATIONS RECEIVED

History of the G.W.R.—Mr. R. Michael Robbins, of 11, North Square, London, N.W.11, has recently had printed the list of corrections prepared by Mr. E. T. MacDermot for his "History of the Great Western Railway (published by the railway company and obtainable from this office). The three sheets of corrections are sold for 6d. the set and include various corrections of dates, some of them based upon the research embodied by the late Mr. H. G. Lewin in his book "The Railway Mania and its Aftermath," published in 1936 by THE RAILWAY GAZETTE.

Dati di Esercizio e Patrimoniali di alcune Amministrazioni Ferroviarie per gli Anni 1937 e 1938. (Particulars relating to the working of and property owned by certain railway administrations for the years 1937 and 1938.) Reprinted from *Trasporti e Lavori Pubblici*, April, 1939. 11½ in. × 8½ in. 12 pp. Two folding tables.—This Italian publication contains a careful and well-arranged selection of statistics and other information concerning the chief European railway systems, extracted from the comprehensive annual statements issued by the International Union of Railways, and forms a handy guide to their financial positions and their traffics during the last two years, with details of the rolling stock possessed, and so on. We notice one mistake, the gauge of the Spanish and Portuguese lines being given as 5 ft., instead of 5 ft. 6 in. The explanations of the various facts are clearly given and the comment thereon is well balanced.

Traveller's Handbook to Paris. London, 1939: Thos. Cook & Son Limited, Berkeley Street, London, W.1. 6½ in. × 4½ in. 168 pp. 13 maps and plans. Price 2s. 6d.—After 60 years of useful service, Cook's original guide to Paris was remodelled and completely rewritten in 1931. Another revision has now taken place, at the hands of Mr. T. G. Barman, who has an intimate knowledge of Paris as resident and visitor. After a general introduction on the situation, history, and configuration of the city, there are 18 pages of practical information which form a useful guide to the stranger within the Parisian gates on subjects as diverse but as important to him as amusements, places of refreshment in various degrees and forms, and postal regulations. The major part of the book consists of itineraries for seeing Paris on foot, by car, and by public transport services, with descriptions of the various places visited which deserve high praise for the condensed yet adequate treatment they give. The visitor is then taken further afield—to Vincennes, Versailles, and Fontainebleau, Chartres, and elsewhere—providing ample material for whole-day excursions. This guide should prove a

valuable companion to the visitor, with its street maps (one to a scale of 3 in. to a mile), museum plans, and index.

I Travel By Train. By Rollo Walter Brown. London: D. Appleton-Century Company, 34, Bedford Street, Strand, W.C.2, and at New York. 8½ in. × 5½ in. × 1½ in. 317 pp. Illustrated. Price 12s. 6d. net.—Mr. Brown is not the first author to find how much of a country he can see simply by travelling in its railway coaches. But in this book he shows us more than a country, he shows us a nation. In superior Pullman smokers, in air-conditioned lounge cars, in creaking old day coaches on local trains, by desolate tracks in the blasted steel country of Pennsylvania we see the face of the U.S.A., and in these places the author reads much of its mind. An indefatigable seeker after truth, he meets with both sympathy and opposition, some of the latter natural, and some otherwise. Truth-seekers are ever up against the undying idea that he who is not with us is against us. But the "smoky semicircle to Gary and South Chicago" is not the whole of America, and though there are many other severe passages in this book, there is beauty also, and often a rare humour. We can look out of a train as it rumbles through a winding valley, rich with the scent of damp, Northern forests. We can look out of another train as it sweeps along by the red earth and moss-shrouded trees of the Deep South. We can turn our eyes inwards on a third train, and enjoy the ludicrous entertainment of two expensive gentlemen getting steadily more drunk in a Pullman car, trying to outdo one another in the disparagement of their wives, and then quarrelling over it, and rocketing up to sudden heights of conjugal loyalty. Then, on one station, Mr. Brown meets and speaks with a quiet, intellectual nun, and she provides one of the most pleasing passages in the whole book. Yes, all America is there, from the train window, from the platform, by the lineside, and in the train itself. Grant Reynard's drawings, which illustrate "I Travel by Train," are at once droll and charming.

Victorian Railways Literature.—The Victorian Railways have issued two illustrated folders dealing respectively with the north-eastern and the central areas of the State. Outstanding beauty spots and other centres of interest are represented by photographic views artistically grouped, and a general impression of what Victoria offers the visitor is succinctly conveyed in the accompanying text. On the back of each folder is a coloured pictorial map of the area concerned. Another folder depicts the Marysville district.

New Zealand Railways Illustrated. The second edition of *New Zealand Railways Illustrated* is even more attractive than the first, reviewed in our issue of

February 18, 1938. A signed introduction by Mr. Mackley, General Manager, New Zealand Railways, after mentioning the high praise accorded by critics, in and out of the Dominion, to the first edition, calls attention to the extending usefulness of the Road Services Branch—in opening up the beauties of the Dominion—and to the illustrations of the electric multiple-unit set and diesel railcars in the new edition. The first six illustrations are reproductions—like all the others in colours—of water-colour sketches by Peter Bonsfield, and add greatly to the variety of the volume. The album is a praiseworthy effort on the part of the railways to give a general idea of the scenic beauties of the "Wonderland of the Pacific."

Trimming Presses.—Bearing the title of "Trimming Presses by Massey," a new leaflet, No. 4400H, has been issued by B. & S. Massey Limited, of Openshaw, Manchester, illustrating and describing the firm's trimming presses. It is a well-produced brochure containing illustrations and detailed information regarding the different types of presses, and including particulars of component parts and general construction. Although coming within the orbit of trade literature, this is an informative publication well worth the attention of any who are responsible for shop equipment where presses of this kind are required.

Heating Elements.—We have received from Geo. Bray & Co. Ltd., of Leeds, an illustrated catalogue of Chromalox and Tubalox electric heating elements, immersion heaters, and similar equipment. Chromalox elements are generally supplied in strip or ring form, and consist of a nickel-chromium resistor, helically wound, embedded in a refractory material, with a heat-resisting chromium-steel sheath for the complete unit. The constructional principle of the Tubalox element is such that the resistor cannot be otherwise than central in its solid-drawn metal tube, whilst in the process of manufacture the elements are fired to a temperature which ensures that the moisture content is completely driven off.

Circuit Breakers and Switchgear.—We have received from Switchgear & Cowans Limited, Manchester, catalogues of the firm's "A" type oil circuit breakers and truck-cubicle switchgear. The circuit breakers are sturdily built and designed to incorporate the minimum of moving parts, while providing a plain break, a moderate air cushion, and a liberal head of oil to maintain an adequate supply of oil at the contact points in fault conditions. The truck-cubicle switchgear is designed for duty in modern substations. It consists of a fixed portion (the cubicle) housing the busbars, fixed isolating contacts, and cable box, and the truck—or metal frame mounted on roller-bearing wheels—to which are affixed the contact-breaker, transformers and their isolating contacts, and the instrument panel.

THE SCRAP HEAP

THE FOURTH DIMENSION

The stop light must not be more than one square inch in diameter . . . —From the police lighting regulations, as given in the "Evening News."

If, too, we add the casualties due to darkened streets, it is possible that by the end of the war the death roll due to A.R.P. may exceed that due to air raids.—A correspondent in "The Times."

The Baltimore & Ohio Railroad locomotive *Atlantic* was built in 1832 and ran for sixty years. It was taken out of yard service at Mt. Clare shops in 1892 to be exhibited at the World's Fair, Chicago. The *Atlantic* has been at many exhibitions, is still able to run under its own power, and is at present an "actor" at the New York World's Fair.

Pilots of the Trans-Canada Air Lines have been called into the fight against grasshoppers in western Canada, the Dominion Department of Agriculture having requested the air line to report on migrations of the insects in the

upper air. Trans-Canada Air Line's pilots are already assisting forestry departments by keeping a watch for forest fires on their flight of 2,291 miles between Montreal and Vancouver.

NOT SO FLYING

The L.N.E.R. Flying Scotsman, running between King's Cross and Edinburgh, will now call at Grantham, York, Newcastle, and Berwick, reaching Edinburgh at 5.20 p.m. In the reverse direction it will call at Berwick, Newcastle, Darlington, York, and Grantham, arriving at King's Cross at 5.20 p.m.—From the "News-Chronicle."

Democratic action is advocated by Mr. J. B. Hill, President of the Louisville and Nashville Railroad, in a message to the staff concerning proposed railway legislation:—"Every railroad man should find out how the Congressman who represented him voted on the proposed legislation and make his wishes known to him that the subject be given prompt and conclusive consideration when Congress again convenes."

CAUTIONARY TALES FOR RAILWAY PASSENGERS

Tale of Clarissa Vane, who damaged the fittings of railway carriages, and perished miserably

Clarissa Vane, while on a train, Liked scribbling on the window pane, And decorated all the coach By means of Mother's diamond brooch.

The quarter-lights, the drop-lights too,

The glass above the lovely view Of Trafford Park (near Manchester) Were all attended to by her.

One day, as she was journeying From Waterloo to Godalming, She spied a most enticing sight: The globe of the electric light.

How grand to see illumined there Her name, upon a crystal sphere! Clarissa, with her dusty feet, Stood up upon the nice plush seat, And grabbed the bulb . . . Electric trains

Are lighted from the traction mains. Six hundred volts, or more, d.c., Is rather strong for you and me. So now, if you should seek Clarissa, I deeply fear that you will missa.

C. HAMILTON ELLIS

Just One Act MAKES A SQUARE DEAL

THIS is the busiest time of the year for all forms of transport. Besides the flood of holiday traffic, the many pleasure excursions and the general call for greater transport facilities in the summer months, there is this year the upward trend in business, the huge rearmament programme and the greater flow of money generally.

¶ The Railways are naturally doing better business than they were at the beginning of the year. This can be observed in the rise in traffic receipts. It is significant, however, that the railways are not doing as well as they should in relation to the vast flow of business.

¶ One Act of Parliament will make a Square Deal, and until that Act has become a fact, there can be no permanent improvement in the financial position of the Railways. If this vital form of transport is to be maintained in a sound economic condition, there must be no delay in making the Square Deal into Law.

ISSUED BY THE RAILWAY



COMPANIES' ASSOCIATION

WHAT ARE THE RAILWAYS DOING?

IN spite of the very difficult conditions under which the Railways are working—conditions which must remain unchanged until Parliament passes the Square Deal proposals into law—they are doing everything in their power to provide better service and greater transport value for both traders and the general public.

¶ For the trader the Railways are instituting a vast speed-up of all freight services, providing 680 express freight trains every 24 hours—double the number six years ago—averaging a speed of 45 m.p.h. More powerful locomotives, more vacuum-braked goods vehicles and more specially designed wagons for the nation's food supplies, are other ways in which the Railways are trying to provide better service for the trader.

¶ For the general public the Railways have embarked on important schemes of renewal and improvement. Hundreds of miles of line have been electrified for greater speed and comfort, stations are being improved and modernised, new and more comfortable carriages are being built. For your pleasure hours the Railways have planned hundreds of extra cheap-day excursions between now and September.

But these developments which give better service and greater efficiency can only be continued if Parliament makes the SQUARE DEAL into LAW.

ISSUED BY THE RAILWAY



COMPANIES' ASSOCIATION

GONE BUT NOT FORGOTTEN!—Two of the latest "square deal" manifestos published in some "National" daily newspapers shortly before Government control of the railways

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

ARGENTINA

Argentine-Bolivian Railway Connection

The Argentine Government has voted the sum of \$100,000 to be expended on survey work on the Argentine section of the proposed railway between Yacuiba (Argentina) and Santa Cruz de la Sierra (Bolivia). The construction of this line was decided upon after the signing of the Chaco peace treaty, and it is claimed that it will open up a large section of Bolivian territory which is at present practically cut off from the neighbouring countries. The Argentine Government has agreed to construct the section from Yacuiba to Villa Montes.

Permanent Way Material for State Railways

In addition the Government has authorised the expenditure of \$3,000,000 pesos on the purchase of sleepers for use on the State Railways. The sleepers are intended to form a reserve stock, but it is stated that the principal object of the Bill is to provide work for the national sawmills in the Chaco Territory and the Province of Santiago del Estero. The cost will be defrayed by means of an issue of Government bonds, the service on which is to be paid by the State Railways.

Engineering and Transport Meetings: Institute of Transport

At a meeting of the Argentine and River Plate Centre of the Institute of Transport, held in Buenos Aires on July 28, several papers on railway topics were read by graduates and students of the institute. Mr. T. C. S. Haslam, Vice-Chairman of the centre, presided. The subjects of the papers were: "A New Departure in Argentine Railway Practice"; "Commercialism and the Argentine Railways"; "Railway Nationalisation in Argentina" and "The Path to Progress." After discussions on the papers, the prize for the best one, consisting of a set of books, was adjudicated by vote to the author of the first-mentioned paper, Mr. L. W. F. Sturgeon (Graduate), B.A.W.R.

Institution of Civil Engineers

At a meeting of the Buenos Aires Association of the Institution of Civil Engineers, held on July 20, papers on "Bridge Foundations" by Messrs. J. Britain Walker, O.B.E., and J. R. Stratford Fox, were read by the latter in the absence, owing to illness, of Mr. Walker. Mr. J. F. Main, M.Inst.C.E., Chairman of the association, presided. Mr. Walker's paper dealt with constructional experiences of bridge foundations, and briefly reviewed some of

the most important work in this connection carried out in Argentina over a number of years. Mr. Fox's paper was devoted mainly to the consideration of types of foundations and the loads which different subsoils will carry, with reference to constructional practice. The Chairman stated that he had asked the two lecturers to address the institution on this subject, as he felt that it was one of great importance, that had received relatively little attention. He said that he was sure none of those present could have failed to increase their knowledge of foundation work, while the junior members present should be able to face with greater confidence any call which might be made upon them to deal with such problems.

Institution of Electrical Engineers

A meeting of the Buenos Aires branch of the Institution of Electrical Engineers was held on July 21, at which Mr. Ratcliffe Wright, M.I.E.E., Chief Electrical Engineer, B.A.W.R., read a paper on "Problems arising from change of frequency of railway bulk electric supply," with special reference to converting plant in general and to the latest types of mercury arc rectifiers. Mr. W. E. Tremain, Chairman of the branch, presided. The lecture was followed by a discussion.

UNITED STATES

Freight Rate Structure Under Scrutiny

The entire freight rate structure of the American railways is undergoing critical examination. Just now the Association of American Railways has full-time committees on the job, who are directed to bring in recommendations for the modernisation of the entire structure. Beginning this autumn, the Interstate Commerce Commission will undertake an exhaustive study of these rates.

In general, the difficulty with the rate structure is that it is still based far too much on the value of the commodities transported, rather than upon the actual cost of transportation. This condition has made the railways particularly vulnerable to competition, which does not seek to replace the railways, but only to take from them that traffic upon which the rates are the highest in proportion to the costs of handling the goods. Revision will be a laborious and lengthy undertaking, but a change in railway rates to conform rather to costs than to the value of the goods transported seems to be the assured outcome, eventually.

The venture, despite the promise it holds out for strengthening the railways' competitive position, is not altogether popular in some railroad

quarters. The current railway rate structure has encouraged the development of firms known as forwarders, who secure traffic by quoting rates somewhat lower than those established by the railways for less-than-carload quantities, traffic which they then transport at railway carload rates, deriving their profit from the difference between the less-than-carload and carload rates. The proposed rate changes in prospect would reduce the margin between the two kinds of rates and, hence, the field of operations of these forwarders. Several of the railways, however, have acquired the ownership of these forwarding concerns at considerable outlay of capital, investments which might decline considerably in value if genuine rate reform is carried out. So these railways are not inclined to favour the proposed reform.

Receipts Show Improvement

As compared with the slump in traffics suffered last year, present receipts are greatly improved. Preliminary reports for July indicate that gross revenues were about 9 per cent. greater than in July, 1938.

DENMARK

New Carriages

The Danish State Railways have taken delivery from the Scandia works, Randers, of eight new "CR" common class bogie carriages. Their length over buffers is 21.72 m. (71½ ft.), and the length of the body 20.42 m. (67 ft.); they are of the side-corridor type with nine compartments, each with eight seats, making a total of 72 seats. The width of each compartment is 1.788 m. (5 ft. 10½ in.), giving ample space for the passengers and also allowing the backs of the leather upholstered seats to slope comfortably. The carriages are all-steel, welded, and built on the box-girder principle; they are equipped with compressed air brake. The tare weight of each vehicle is 35.2 metric tons. The windows are of the half-drop type.

As compared with the carriages of the same general type received in 1932, the only differences are, that the older ones have only 8½ compartments, but they are a little wider, so that the total length is exactly the same; also the older coaches were of riveted construction and weighed 43.8 tons, so that the saving in weight by welding is 8.6 tons or 19.6 per cent.

Modernisation and Extension of the Copenhagen—Slangerup Railway

The Copenhagen—Slangerup railway is a private concern opened in 1906 with a share capital of two million kroner. The railway has only a small goods traffic, but carries over one million passengers a year, mostly suburban traffic to and from Copenhagen. Dividends were paid until 1924, but since then the financial position has deteriorated. In 1929 the

suburbs served by the railway bought the majority of the shares, and a better train service was introduced and many other improvements carried out, resulting in an increase in passenger traffic of over 100 per cent. In the following years there was a small deficit, but in the last two years the deficit has increased very much, amounting to Kr. 116,000 in the year ended March 31, 1939. There are now only two possibilities, the closing of the line, or electrification and other modernisation.

During recent years negotiations have been carried out with respect to electrification, and a scheme has now materialised, in which the old share capital is cut down to nil, and the Copenhagen Municipality and the North Zealand Electricity Co. Ltd. (N.E.S.A.) will jointly take over the railway and carry out the electrification.

Joint Ownership

The Copenhagen Municipality will electrify the line from its present terminus (adjoining the important Nørrebro thoroughfare) to Emdrup, and also double this length of line. The railway is also to be extended on a separate road to the centre of the town near the Town Hall Square, where land for a terminus is available, and it is to be run as a fast tramway, with cars similar to the newest bogie tramway cars in the city, only longer.

The N.E.S.A. will electrify the line from Emdrup to Farum and also double the length from Emdrup to Hareskov, at an estimated cost of Kr 5,500,000. From Farum to Slangerup the railway is to be closed and replaced by buses, worked by the N.E.S.A. This joint ownership by the Copenhagen Municipality and N.E.S.A. is similar to the existing division of ownership of several tramway and trolleybus lines running from Copenhagen to the North, where the stretch

of line in Copenhagen is worked by the municipality and the rest of the line by N.E.S.A. It may be added that the N.E.S.A. is controlled by Gentofte city, a large suburb north of Copenhagen.

The final plan is practically completed, and the electrification is expected to be carried out by April, 1941. Most of the present staff would be employed under the new working conditions. In order to extend the line to the centre of the city it will be necessary to lift the railway at the present terminus to avoid crossing the Nørrebro road on the level, as was the case five years ago with the State Railways Frederiksberg—Hellerup line which crosses the street at the same place. The two lines will in future have a common station. It is possible that the line will later be carried to the centre of the town by another route. On the inner part of the Nørrebro the traffic is extremely congested, and the Municipal Tramways have prepared plans to run the three tramway lines along under the road in tunnel. In that case the Slangerup railway will probably use the same tunnel and reach the city centre in the same way as the ordinary tram routes.

WESTERN AUSTRALIA

Harvest Prospects

The 1939 harvest season is opening well, and present indications are that a satisfactory harvest may be looked for. Good opening rains fell throughout the bulk of the agricultural districts during May, and these have been supplemented by further good falls in June, so that given the usual average rain during the growing period, excellent grain crops should be assured in most of the farming areas.

The year has proved a particularly good one from a pastoral point of view

and the rail traffic in lambs for export is expected to be exceptionally heavy. It is anticipated that approximately 500,000 lambs will be exported from Western Australia during the coming export season, and to meet the demands which will be made for stock trucks for the conveyance of the lambs to the freezing works, 50 new sheep wagons were recently completed and placed in traffic; a further 50 are under construction, many of which will be available for the peak loading period in September-October next. The heavy influx of lambs into the freezing works naturally postulates a greater output of carcasses from the works to the port, and to meet this position a number of additional 4-wheeled cool storage insulated vans are being constructed at the Midland Junction workshops and will be completed in time for use this year.

THE FAR EAST

Resumption of Rail Traffic Around Canton

The first 35 miles out of Canton on the Canton-Kowloon (Chinese section) Railway and the first 30 miles of the Canton-Hankow line are expected to be re-opened for public traffic about September 1. The railways around Canton have been out of action since the Chinese evacuated that city and the Japanese occupied it.

Tokyo-Shanghai Air Service Inaugurated

A regular aircraft service has now been inaugurated between Tokyo and Shanghai by the Japan Airways Co. Ltd. The flight occupies 6 hr. and the fare is Y.150; American-built air liners are used.

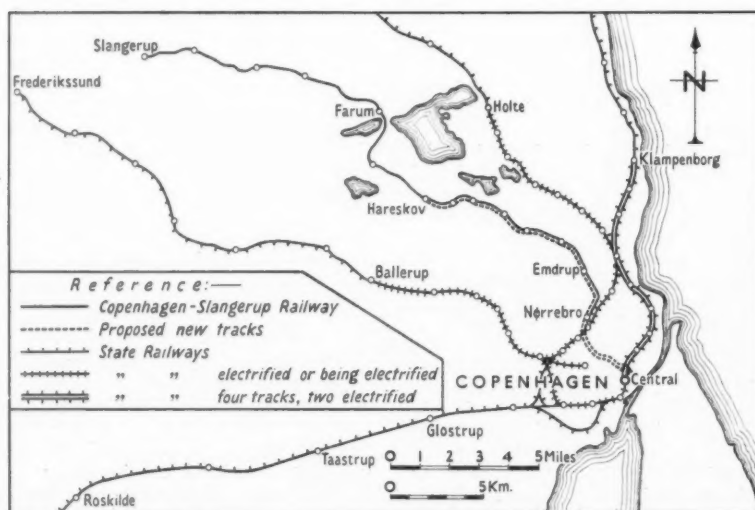
Shanghai-Peiping Through Services

The North China and Central China Railways have jointly inaugurated through passenger and freight services between Shanghai and Peiping as from August 1, without change of passenger trains at Nanking and Pukow as hitherto; sleeping cars are available.

The Yunnan-Burma Railway

The length of the railway now being built to connect Kunming (Yunnanfu), the capital of the Province of Yunnan, with the Burma frontier near Kunlong ferry, on the Salween River, is now stated to be 530 miles, and 100,000 men are said to be employed on its construction. Work was begun last Christmas, and General Chiang Kai-shek is reported to have issued orders, personally, that the line is to be completed by the end of the current year. Considering the nature of the country traversed this will be a prodigious feat, even if only a temporary fair-weather line is rushed through in anything like this period.

There is still no news of any move being made to link up the Burma Railways railhead at Lashio with the frontier near Kunlong, a mere 100 miles.



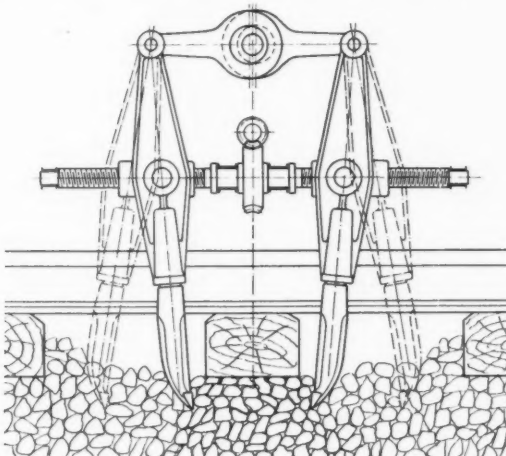
Sketch map showing city extension and doubling of the Copenhagen-Slangerup Railway

PACKING BALLAST UNDER THE RAILS

Petrol-driven machine which automatically forces ballast under sleepers

THE ballast packing machine illustrated, designed by August Scheuchzer, of Lausanne, is claimed to permit of even packing without crushing the stones. It is carried on a four-wheel frame and is operated by a 45-h.p. petrol motor, with a four-speed gearbox providing forward and reverse speeds varying from 4 to 28 m.p.h.

The actual packing is done by a pair of vibrating tool frames. One of these is suspended at each side of the machine from a part of the frame in the centre, so designed as to allow the tool frame to rise and fall. Each of these tool frames comprises an independent chassis *A* suspended by a lever *B*, one end of which is pivoted to the chassis and the other to the frame of the machine *C*. The centre of the lever rests on the top of a hydraulic jack *D* which serves to lower and raise the tool frame. The actual forcing of the tools into the ground is accomplished by means of a second jack *E* which presses against the frame *C* and the chassis *A*. Packing is carried out by two sets



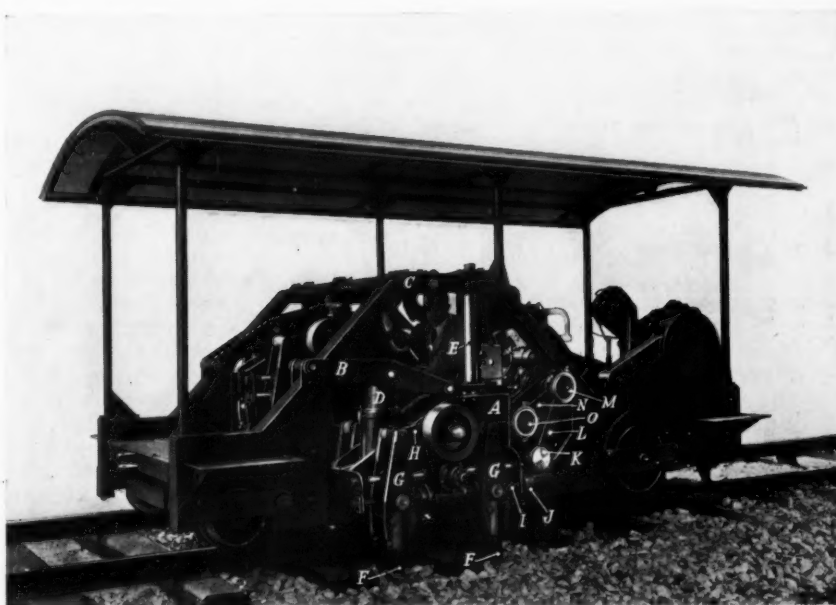
Above: Diagram showing the movement in the ballast of the tools of the Scheuchzer ballast packing machine

of tools *F*, each tool fixed at the end of a tool arm *G*. Eight packing tools are provided on each of the tool frames, arranged so that there will be two at each side of the rail in front of the sleeper and two at each side of the rail behind the sleeper. The tops of the tool arms *G* pivot on a lever *H* to which is imparted a slight balancing movement by means of an eccentric so that the tool arms vibrate up and down.

A screw *I* is also provided on the tool frame, and runs through blocks *J* which are connected by pivots to the tool arm *G*. A worm drive causes the screw *I* to rotate slowly, drawing the blocks together towards the centre of the screw, and so causing the tools to move towards each other. A special strain device is inserted into the worm gear drive so that when the strain on the drive reaches a regulatable maximum value, the gear is automatically thrown into reverse. The jacks which control the up and down movement of the frame are also reversed, to raise the frame and draw the tools up.

In service the machine is run along the track until it reaches the point where work is to be begun. The tools are then lowered so that they will be driven into the ballast, the vibration of the tool arms helping their penetration. When the tools have begun to penetrate the ground, the screw *I* draws the tools together while they continue their downward movement. This movement of the tools towards each other forces the ballast material under the sleeper, and only when the ballast has been packed sufficiently tight to provide the desired resistance does the movement automatically reverse.

Drive for the moving parts of the tool frame is obtained by a chain drive on a double lever system as follows: a chain from the crankshaft of the motor drives a sprocket wheel mounted on a shaft *K* fixed to the frame of the machine. This shaft serves as a pivot for an arm *L* and also carries a second sprocket from which a chain drive runs to a sprocket on the shaft *M* at the end of the arm *L*. A second arm *N* pivots on this shaft, which has also a second sprocket, with a chain drive to the shaft *O* situated on the tool frame. This shaft serves as a pivot for the other end of the arm *N*. By this system the drive of the moving parts of the tool frame is assured whether the frame is moving up and down or whether it is resting at any intermediate position.



Right: The ballast packing machine mounted on a four-wheel trolley driven by a 45-h.p. internal-combustion engine

PERIODICAL WEIGHING OF LOCOMOTIVES

The importance of systematic procedure

(From a correspondent)

AS the importance both to the locomotive and the track of correct axlebox weights is so great, it seems remarkable that more attention is not given to the matter of periodical weighing after the engine has been handed over to the operating department. Nowadays it is almost universal practice before the locomotive leaves the erecting or repair shop, to adjust these weights to the designed amount on the completion of any sort of repair that might possibly affect them. For some unexplained reason similar classes of repairs are frequently made in the running-shed without any more after-attention being given to weights than that of measuring the length of the hangers or camber of the spring concerned, at which time the hangers are adjusted where necessary to a standard length or spring camber.

Except where there is actual breakage of material when defective springs have to be replaced by new ones, or over-heated axleboxes machined and refitted, all of which items are liable to affect the weights, the results of wear and fatigue are not usually taken into account. Indeed, it is quite usual running-shed practice to send the engine back to work with a new spring or refitted box without even troubling to adjust by measurement. This is especially common with compensated spring-gear as, it is argued, the compensating arrangements will automatically and correctly distribute the weight. In the writer's experience this is by no means a correct assumption and ought never to be taken for granted. In multi-coupled engines the position of the centre of gravity and the compensation of the rearmost axle only at the forward end of its springs, tend to keep weight off this axle. The writer recalls considerable trouble with a class of 4-8-0 American locomotives on a colonial railway with inferior track, which showed itself in derailments when the locomotives were travelling tender first immediately after general repairs. These engines were compensated throughout, and reliance was, and indeed, had to be, placed on measurement, as no weighing apparatus of any kind was available. It seemed probable—although the measurements would be correct in the shops—that a combination of stiff gear and slightly-weak springs kept the weight off the rear axle to some extent and so caused the derailments;

the best cure was found to be the insertion of packing between the axlebox and spring.

The danger of a *laissez faire* policy is shown in the table herewith of weights of a Garratt engine after running approximately 40,000 miles since a general repair, which included weighing in the ordinary course. It should be noted that the figures quoted are those of the fourth attempt; the figures for the earlier attempts were suspect because of their extraordinary showing. The engine was pulled over large steel nuts, placed on the track between each attempt with the idea of shaking the spring-gear free but without effect. The correct, *i.e.*, designed, weights are given in the right-hand column.

It appeared from the records that the left-hand spring of the over-weighted axle had recently been changed, although why this should throw excess weight on to the other end of the axle is not quite clear. The general unevenness is, however, a very interesting point, and shows the advisability of periodic weighing, which for colonial railways may be put at about 25,000 miles or immediately after any spring-changing. Another recommendation in this direction is that, in the absence of weighing apparatus both springs of an axle should be renewed even when only one has proved defective.

It is probable that most, although certainly not all, railways have some form of weighing plant at their principal repair-shops, usually of the type in which a floating table forms part of the track on to which the engine to be weighed is run. The provision of such an installation should suffice for a small railway on which the working of its engines through the headquarters depot in the ordinary course of traffic is a simple matter, but on larger systems some form of additional portable apparatus seems advisable in order that it can be circulated when required, at all events among the major depots. The most portable form comprises a separate balance-arm with scale for each wheel to be weighed, and sufficient units simultaneously to weigh each wheel on one side of the engine should be provided; it is as a rule necessary that the track should stand up clear of the shed floor to give room for their adjustment. It may be added that these units are very simple to fix or detach and that the whole process is very quickly and easily got through. The weakness of a circulating system is that the units may be wanted at the same time at more than one depot, a requirement which may be intensified in remote districts by the paucity of the train service. In such a case, and if the engine concerned is required for service, the old method of measurement would have to be relied on until the engine could be got to the scales or the scales to the engine.

Much attention is being given at the present time to the regular servicing of locomotives in the running sheds, and the writer feels sure that if a few weights of engines that have been stopped for general repairs were checked before the engine was stripped, the justification for a greater attention to weights would immediately be established. It may be, of course, that the approximate mileage suggested above (25,000 or after spring-changing) would require to be varied in proportion to the general condition of the track and possibly the skill, especially in tempering, of the available spring-smiths. There can be no doubt that, besides tending to over-heat, over-weighted axles may damage the track and cause derailments.

		Front Engine				Actual total		Designed total	
Right	Left	Axle		T. C. O.		T. C. O.		T. C. O.	
T. C. O.									
3 9 0	Front bogie ..	..	4 2 2	7 11 2	16 13 1				
3 1 3	Back bogie ..	..	4 8 2	7 10 1					
5 11 0	Leading dr. ..	..	4 9 2	10 0 2	10 4 2				
6 4 2	Driving ..	..	4 10 2	10 15 0	10 4 3				
5 4 3	Intermediate ..	..	5 18 2	11 3 1	10 10 0				
3 11 1	Trailing ..	..	5 1 0	8 12 1	10 4 3				
3 8 1	Carrying ..	..	3 16 1	7 4 3	6 12 0				
Rear Engine									
4 1 0	Front bogie ..	..	2 19 1	7 0 1	16 14 2				
4 7 2	Back bogie ..	..	2 15 2	7 3 0					
3 17 2	Leading dr. ..	..	4 14 2	8 12 0	10 10 0				
7 13 2	Driving ..	..	9 17 1	17 10 3	10 10 0				
3 18 1	Intermediate ..	..	4 9 0	8 7 1	10 10 0				
3 12 0	Trailing ..	..	4 2 1	7 14 1	10 10 0				
2 8 3	Carrying ..	..	4 4 3	6 13 2	7 0 1				

Remarks. Boiler three-quarters full; tanks full; bunkers full; engine weighed straight off the road.

THE NORTH BRABANT RAILWAY

Some notes on the history of a line which was once of considerable international importance, and is now of mere local interest. Its passenger services may shortly be replaced by buses

A DUTCH railway which remained separate from the two chief and well-known systems until after the war was the North Brabant German Railway (Noord-Brabantsch-Duitsche Spoorweg-Maatschappij), whose route, now of little or no importance, at one time carried international traffic and whose early history was somewhat chequered. Seventy years ago, on February 24, 1869, the Netherlands Government granted a concession to W. H. van Meukeren for the construction of a line from Boxtel, not far south of s'Hertogenbosch, to the German frontier, to work which the North Brabant German Railway Company was founded in Rotterdam in the following May. It also obtained powers from the Prussian Government to build lines from the frontier near Gennep to Kleve and Goch, but only the latter was constructed. The company early contracted heavy loan interest liabilities, which prevented it from ever paying an ordinary dividend and eventually forced it to go into liquidation some 50 years later. It was even unable to purchase the rolling stock it needed and at times had to resort to hiring; moreover, its payments were often in arrear.

On July 15, 1873, the first portion of the line was opened, from Boxtel to Goch (the latter town on Prussian territory), but the last portion to Wesel was not ready until July 1, 1878. Traffic receipts then began to increase considerably; from 1880 to 1892 they remained about level, and after that there was substantial improvement. From 1880 to 1892 the North Brabant line was in open competition with the State Railway Company's line from Boxtel to Crefeld, which it roughly paralleled, and that company looked with much disfavour on the interloper. The latter scored a success when, from May 15, 1881, the Flushing mail trains to Berlin and Hamburg, which had previously been routed *via* Venlo, were diverted over the North Brabant line to Wesel, securing the company an important place in international services. The intruder then tried to obtain a concession for another piece of competing line, from Boxtel to Baarle-Nassau, in an attempt to take part in the Belgo-German transit traffic from Antwerp, but the opposition of the State Railway Company was successful and the plan fell through. The North Brabant line, however, joined with the Veghel Screw Steamship Company in establishing a goods service between Rotterdam and Germany, transshipping to the rail at Veghel, and developed this traffic so successfully that eventually five vessels were engaged in it.

The State Railway Company succeeded in coming to better terms with Prussia over goods rates and in diverting the through freight traffic over its Venlo route again. Difficulties also arose between the two concerns over the working of the joint station at Boxtel. In 1887, with the introduction of a Flushing-Queenborough day boat service, two further mail expresses were run over the Boxtel-Wesel route. In the following year, however, the State Railway Company, supported by the city of Crefeld, succeeded in getting the Berlin service again diverted to its own route, leaving only the Hamburg trains to its competitor. This was not to the public liking, as the North Brabant route was well suited to making up lost time, and connections were better kept by the trains which ran that way. The State Railway Company was offered

running powers over the route, but declined to consider the matter. It is worthy of record that the North Brabant system had slip coaches running in the 'eighties, leaving one of the through evening trains at Offelt; and also had four classes of carriage, long the custom in Germany.

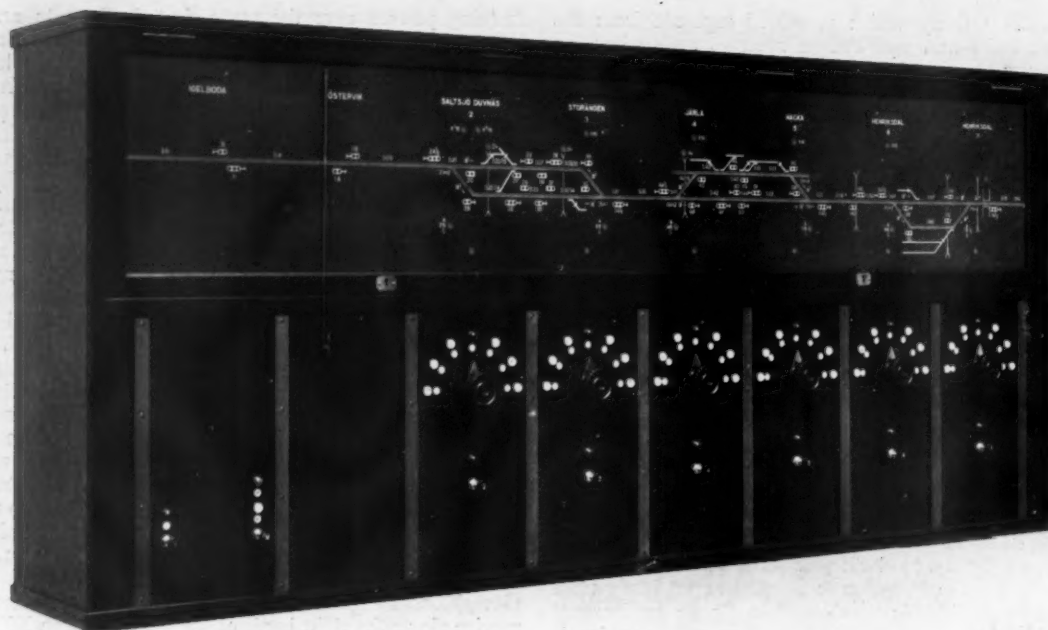
In the early nineties the two lines became more friendly and in December, 1892, the Flushing-Berlin mails again ran over the North Brabant route and were hauled by that company's engines over the Prussian lines to Oberhausen. The Hamburg trains were so hauled as far as Haltern till 1911, and to Münster thereafter. From 1890 to the war were years of much prosperity so far as traffic receipts went, but the crippling loan charges remained. In agreement with the State lines the South German mail trains were also routed *via* Boxtel and Wesel from 1897, while the two companies and the Netherlands Central Railway adopted common methods of fixing charges. Restaurant cars were introduced in the day Flushing-Wesel services in 1897 and later ran right through to Basle. The North Brabant line had been built as single track, but was doubled in 1903 between Boxtel and Mil, to facilitate the mail services, and eventually to Goch in 1911. To relieve the latter (Prussian) station, a second customs examination station was built in 1908 at Hassum, also in Prussia. The company secured a considerable interest in the Meuse (Maas) Local Light Railways, which worked a steam tram service along the right bank of the river between Nijmegen and Venlo.

The war proved a serious blow to the North Brabant German line. On August 1, 1914, without legal process, the company (although retaining management of the services) was excluded from working over the Prussian sections, this being confided to the Essen divisional management of the Prussian State Railways. The Netherlands portion of the route, with rolling stock, was requisitioned by the Dutch Government, and an agreement was made for payment to cover loss incurred through mobilisation and other causes. In 1916 the two principal railway companies in the Netherlands—the Holland and the State—concluded a working arrangement, to which the Netherlands Central Railway later adhered, and, the position becoming steadily worse, the North Brabant line approached the State management in 1918, with the result that the latter agreed to take over the working from June 1, 1919. The Rotterdam-Veghel steamboat service was then abandoned.

International services, suspended during the war, were resumed after it, but the Zeeland night boat service from Flushing was changed to a day service. The North German mail trains now ran over the Zutphen-Oldenzaal route and those to South Germany again *via* Venlo, so that the Boxtel-Wesel line lost all its importance. Interested parties forced the company into liquidation in 1922. Its Dutch lines passed into the possession of the State Railway Company, then working them, and its German sections became the property of the Reichsbahn. Since that time the once-important international route has been of merely local value and it is expected that all passenger traffic over it will cease before long, as plans are under consideration to establish a bus service in its place. Our contemporary, *Spoor-en Tramwegen*, for July 8, 1939, has an interesting article on the line by Mr. D. van Setten, from which the above particulars are taken.

C.T.C. ON A SWEDISH PRIVATE RAILWAY

Application of the principles of centralised traffic control on a Stockholm local line makes for greater efficiency and economy



Control panel at Neglinge, near Stockholm, from which the traffic working on the Saltsjön Railway is supervised and directed

A TYPE of signalling installation new to Sweden has recently been brought into service on the short, privately-owned Stockholm—Saltsjön Railway running out of the capital and serving the suburban communities between it and the coastal resort of Saltsjöbaden. Simplicity of operation and economy in both the installation of this equipment and its maintenance are the main advantages claimed for the new apparatus. The equipment was worked out and installed by Signalbolaget, Stockholm, associated with the L. M. Ericsson Telephone Company.

The new system is a form of centralised traffic control whereby one operator has control over all track sections, points, signals, &c., for seven stations. Positions of all trains and settings of all points and signals are shown by small lamps, which light up and go out in accordance therewith on a schematic diagram of the layout. The one operator thus controls all traffic along the line, and local signalmen at the various stopping places have been eliminated.

Ordinary telephone lines are used for the transmission of signals, two for sending out the controls and two for return indication purposes, or only four in all. A further economy has been obtained from the fact that special apparatus was not built for the new system. Ordinary stock parts were used, as developed by the L. M. Ericsson Telephone Company for their different automatic telephone exchanges, constituting an application to railway signalling of the experience gained in automatic telephony.

It is thought possible to operate as many as 20 station units with this type of equipment, over a 30-km. section of line from one central point. By taking special measures with regard to line and leakage resistance, &c., this distance could probably be materially increased.

Accumulator battery current at 100 volts is used, both for selection of outside locations when transmitting an order and for the proving current in the indication circuits. Actual movement of points, crossing gates, and other local operating mechanisms is effected by power derived from the local electric supply in the towns along the line.

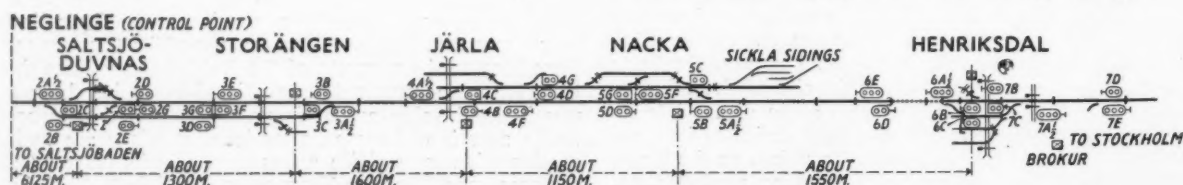


Diagram of C.T.C. section of Stockholm-Saltsjön Railway



[Photo]

[The Times]

Above: An aerial view of the industrial works and railway layout at Saarbrücken, which town is within a loop of the Siegfried line



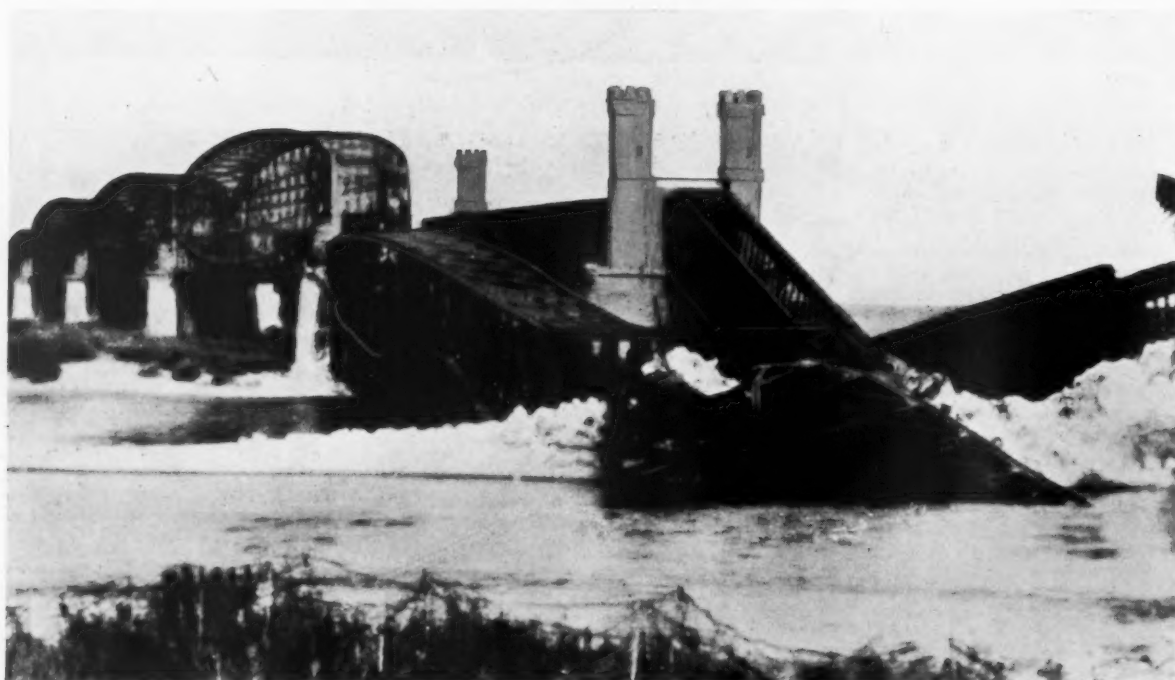
Right: Patients from London hospitals being evacuated in an ambulance train composed of freight vans adapted specially for the purpose



Hitler visiting wounded German soldiers in an ambulance train



A railway scene in Poland after bombardment. In the background may be seen the ruins of the bridge shown in the picture below



Large steel girder bridge in Poland destroyed by German gunfire

RAILWAY NEWS SECTION

PERSONAL

The Ministry of Home Security has been established by an Order in Council made under the Ministers of the Crown (Emergency Appointments) Act, 1939. Sir John Anderson, G.C.B., G.C.S.I., G.C.I.E., M.P., will act both as Secretary of State for the Home Department, and Minister of Home Security. In his capacity as Minister of Home Security Sir John Anderson has appointed Sir Thomas Gardiner, K.C.B., K.B.E., and Sir George Gater, C.M.G., D.S.O., to be Joint Secretaries of the Ministry.

Sir Thomas Gardiner is Director-General of the General Post Office and his services were placed at Sir John Anderson's disposal by the Postmaster-General when Sir John Anderson first became responsible for Civil Defence on his appointment as Lord Privy Seal in November last.

Sir George Gater is at present Clerk of the London County Council and Permanent Under Secretary of State Designate for the Colonies. The London County Council has agreed, at Sir John Anderson's request, to make his services available forthwith.

The Lord Privy Seal (Sir Samuel Hoare) has appointed Lt.-Colonel J. T. C. Moore-Brabazon, M.C., M.P., to be his Parliamentary Private Secretary, and Personal Assistant, and has appointed Mr. A. S. Hutchinson, C.V.O., of the Home Office, to be his Principal Private Secretary. On September 11 the Lord Privy Seal removed his office from the Home Office to the Treasury.

Sir Guthrie Russell, K.C.J.E., Chief Commissioner of Railways, Indian Railway Board, has been appointed President of the War Transport Board which the Government of India has created for the control and co-ordination of road, rail, and sea transport.

INDIAN RAILWAY STAFF CHANGES

Mr. P. H. Yeld, Deputy Traffic Manager, E.B.R., has been permitted to retire from Government service as from July 26.

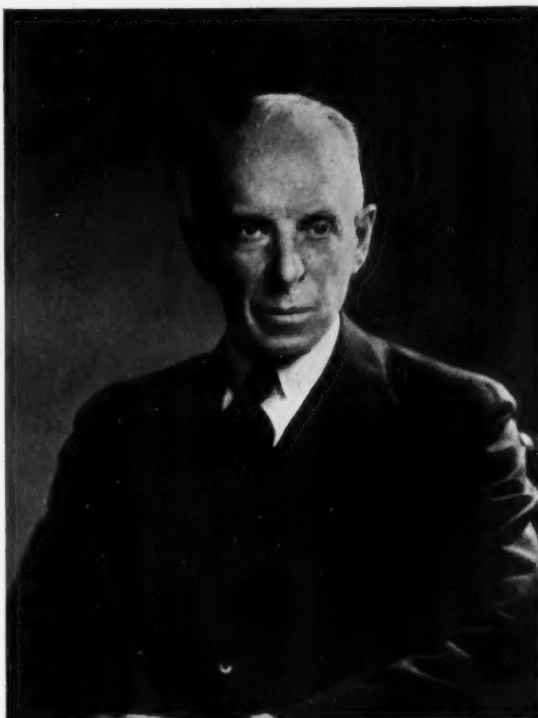
Mr. I. T. St. C. Pringle has been confirmed as Deputy Traffic Manager as from that date.

Dewan Bahadur Mathra Das has been confirmed as Deputy General Manager, Personnel, E.B.R., as from July 26.

The appointment, recorded in our issue of August 11, of Mr. Harold W. Clapp, M.Inst.E.E., as General Manager, Commonwealth (of Australia) Aircraft Construction, has—as the *Victorian Railways News Letter* points out—two marked reactions from the railway point of view. These are pride and satisfaction that Mr. Clapp's out-

Power of these tramways. It was with the operating experience thus gained, that he went to the U.S.A. in 1901 to seek wider scope for his talents, and his first position in that country was with the General Electric Company of Schenectady, New York. He remained with this company for about six years, during which time he represented its

interests in the Manhattan Elevated Railway Company, the Interborough Rapid Transit Company, the Hudson tubes, and the New York Central Railway System, and also in several other large operating companies. In addition, the General Electric Company sent him to Philadelphia to take charge of the electrification of the West Jersey & Seashore Division of the Pennsylvania Railroad. In 1908 Mr. Clapp left the service of the General Electric Company to take up a position with the Southern Pacific Company, where he had entire charge of the engineering details in connection with the electrification of steam suburban railway services operating through the Oakland, Alameda, and Berkeley transbay area. Subsequent to his association with the Southern Pacific Company, he served as General Superintendent and later as Manager of the Columbus Railway, Power & Light Company, Columbus, Ohio. At the same time he was Vice-President in charge of operation of a large group of electric power, lighting, and traction properties owned by the same management in Central Illinois. He resigned from these positions in August, 1920. Just prior to leaving America to assume the office



Mr. Harold Winthrop Clapp

Chairman of the Victorian Railways Commissioners since 1920, appointed General Manager, Commonwealth (of Australia) Aircraft Construction

standing abilities as an administrator and engineer have been recognised by the Commonwealth Government, and genuine regret at the loss of his services to the Victorian Railways. In the belief that a few further details of the career of so well known a railwayman will be of interest to our readers, we give them below, and also take this opportunity to publish a more recent portrait of him.

Born at Melbourne on May 7, 1875, Mr. Clapp was educated at Brighton Grammar School and Melbourne Church of England Grammar School. After his apprenticeship with the Otis Engineering Company of Melbourne, he took up work with the Brisbane Tramway Company, which had just begun to electrify the horse tramway system, and was for four years Superintendent of Motive

of Chairman of the Victorian Railways Commissioners in September of that year, he relinquished the vice-presidency of the East St. Louis and Suburban Railway, East St. Louis, Illinois, and the vice-presidency of the E. W. Clark and Company Management Corporation. Among his many other activities, Mr. Clapp was Chairman of the Honorary Board of Control, Australian National Travel Association.

Mr. Sidney E. Hitchcock, who retires on September 30 from the position of Rating Agent, Southern Railway, was with Castle & Son, Rating Surveyors, prior to joining South Eastern Railway Company's Rates and Taxes Department in 1894. He was appointed Assistant Rating Agent to the South Eastern & Chatham Railway Companies' Man-aging Committee in 1901 and Rating

Agent in 1905. Mr. Hitchcock was retained for many years as rating expert by the Union Cold Storage Company and subsidiaries, Watney, Combe, Reid & Company, the East London Railway Joint Committee, the Dover Harbour Board, various light railways, and so forth. He has advised several rating authorities, including the City of London, and has practised in income tax, and excess profits duty cases. He collaborated with Mr. Davey, Barrister-at-Law, in the standard work "Law of Rating." Upon the formation of the Southern Railway Company, Mr. Hitchcock was appointed Rating Agent (Eastern & Central Sections), and in 1931 became Rating Agent of all sec-

Mr. A. Urquhart, who has occupied the position of Staff Superintendent in the Railways Department, New Zealand, since 1931, and the dual position of Staff Superintendent and General Inspector since 1935, has retired on superannuation after forty years' service. Mr. Urquhart joined the department in 1899, and had exceptionally wide experience as stationmaster, relieving officer, and train running officer in the Traffic Branch. Transferring to the head office of the department in 1924, he was thereafter engaged on important administrative duties, leading to his appointment as Assistant Staff Superintendent in 1927, and followed by his advancement to

ways Appeal Board, a position which he has filled with marked ability, distinguished by tact, courtesy, and impartiality.

Mr. R. P. Summers, Assistant Treasurer to the London Passenger Transport Board, retired on August 12. In 1896 Mr. Summers entered the service of the London Tilbury & Southend Railway Company as an audit clerk. He was transferred to the Accountant's Office in 1900, and appointed in 1902 as Personal Assistant to the Secretary & Accountant of that company, and of the Whitechapel & Bow, and Tottenham & Forest Gate Joint Committees.



[Photo] [Wykeham Studios]

Mr. Sidney E. Hitchcock

Rating Agent, Southern Railway,
1931-39



Mr. A. Urquhart

Staff Superintendent, New Zealand Government
Railways, 1931-39



Mr. A. J. Levick

Appointed Staff Superintendent, New Zealand
Government Railways

tions. In 1925 he was appointed a member of the committee set up by the railway companies to consider the provisions of various Bills and other matters affecting the Rating of Railways, including, *inter alia*, the Bill which was ultimately passed as the Railways (Valuation for Rating) Act, 1930. Mr. Hitchcock was engaged in the Rating Appeals of the Southern Railway Company (1934-36), as well as in many rating cases since 1901, in several of which he has from time to time given evidence. As we announced in our issue of August 11 last, on page 215, Mr. A. Endicott has been appointed Estate and Rating Surveyor, Southern Railway, from October 1; a portrait and biographical note of Mr. Endicott were published in our September 8 issue.

We regret to record the death on August 26 of Mr. Herbert G. Riddle, Secretary of the Junior Institution of Engineers (Incorporated). Mr. Riddle was about to retire after 21 years of service.

the chief executive position on the staff administrative side in 1931. Mr. Urquhart has taken an active part in the administration of the new Zealand Amateur Athletic Association, and for some years was delegate to the Council.

Mr. A. J. Levick, who succeeds Mr. A. Urquhart as Staff Superintendent, New Zealand Railways Department, was born in Carterton, Wairarapa, and began his career in the Railways Department in 1901 as a cadet at Pahiatua, where, and at various Hawke's Bay stations, he gained his early experience in general railway duties. He has occupied successively the positions of Relieving Officer, Transport and Train-running Officer, and Divisional Clerk, and is well-known in the King Country as Chief Clerk in the District Traffic Manager's Office, Ohakune Junction. In 1936 Mr. Levick was appointed Assistant Staff Superintendent. In that capacity he is widely known among railwaymen as the department's Advocate before the Rail-

The District and the Tilbury Railway Companies were partners in the building of the Whitechapel & Bow Railway; each raised £600,000 of the capital required. In 1913 the Midland Railway acquired the L.T. & S.R. undertaking. Two years afterwards Mr. Summers became Chief Clerk of the Secretary & Accountant's Office of the Midland Railway (L.T. & S. Section). In 1920 the Midland Railway broke up the Tilbury section, and the members of the staff were transferred to various places, and Mr. Summers himself expected to be sent to Derby, but before that could happen it was decided that the District Railway should take over the management of the Whitechapel & Bow Joint Committee for the next ten years. In 1928 he was appointed Deputy Assistant Treasurer of the Underground group; in 1933, he was appointed in a similar capacity to the London Passenger Transport Board; in 1935 he became an officer, with the title of Deputy Assistant Treasurer; and in 1937 this title was altered to Assistant Treasurer.

STAFF AND LABOUR MATTERS

Railway Staff National Tribunal

The claims of the National Union of Railwaymen, the Associated Society of Locomotive Engineers & Firemen, and the Railway Clerks' Association for increased rates of pay and improved conditions of service have been referred to the Railway Staff National Tribunal for decision, and the hearing has been fixed to begin on September 19. The composition of the tribunal, which consists of three members, will be Sir Arthur Salter, the Chairman, Mr. H. E. Parkes, the member nominated by the railway companies, and Mr. H. J. May, the member nominated by the trade unions. The tribunal will be assisted by six assessors, three nominated by the railway companies and three by the trade unions.

Armed Forces (Conditions of Service) Act, 1939

This Act, as its title implies, lays down the conditions of service of members of the armed forces of the Crown and under one of its sections there is a provision that at any time during the period of the present emergency a soldier of the regular forces may, by order of the competent military authority, be released from army service; and, so long as the Order remains in force, he shall be in the position in which he would be if no proclamation ordering the army reserve to be called out on permanent service were in force, and he had, at the time of the making of the order, been duly transferred to that reserve. In introducing this Act the Government stated that steps would be taken to ensure that the man-power essential to industry would not be taken away.

Motor Drivers' Hours

An Order issued by the Minister of Transport permits drivers of motor vehicles used for haulage of supplies or materials for Government purposes to work longer hours than those prescribed

in Section 19 of the Road Traffic Act. The fact that a driver is engaged on such work must be entered on his records. A condition is that the driver must have at least ten hours' consecutive rest after every occasion when excessive hours are worked.

Schedule of Reserved Occupations

The war-time Schedule of Reserved Occupations has now been issued by the Ministry of Labour and in the explanatory memorandum it is stated that the purpose of the Schedule of Reserved Occupations is to ensure that workpeople required for the maintenance of necessary production of essential services are not accepted for service in which their skill and experience will not be used. The schedule includes some occupations which may not at first sight be felt to be important in war time. These have been included because the workpeople concerned possess skill which may be urgently needed upon essential work. The schedule is compiled on an occupational basis and, except where otherwise stated, is applicable to all persons in the occupations named without regard to the industry in which they are employed.

The schedule contains a list of occupations against each of which an age is printed. In general, this means that men in any of these occupations, whether they be employees or employers or work on their own account, cannot be accepted for whole-time service in any of the services of national defence if they are of or above the age mentioned. Men below the age printed against their occupation can be accepted in any of the Services of National Defence subject to the restriction, in the case of certain occupations, that men can only be accepted if they are required in their trade capacity.

The following entries appear in the schedule under the heading "Rail Transport":—

<i>Railway Official (including Assistant)</i>		Age
Manager, superintendent	25	
Stationmaster, yard master	25	
Inspector	25	
Agent	25	
Traffic control staff	25	
Other executive official (not specified above)	25	
<i>Railway Engine Driver, Motorman, Fireman, Engine Shed Worker</i>		
Shed foreman, shed chargeman (locomotive), running shed foreman ..	25	
Engine driver, locomotive driver (steam)	25	
Motorman (electric)	25	
Engine driver (internal-combustion engine)	25	
Engine driver (narrow-gauge railway) ..	25	
Fireman (locomotive)	25	
Engine cleaner	25	
Other engine shed workers (excluding labourers)	25	
<i>Signal Linemen, Platelayer (Permanent Way Staff) (Railway)</i>		
Chief lineman, ganger, sub-ganger ..	25	
Signal and telegraph lineman, wireman, fixer, installer (including assistant)	25	
Platelayer, lengthman, relayer, patrolman	25	
Permanent way maintenance and repair staff	30	
<i>Railway Porter, Goods Checker</i>		
Working foreman, leading porter, station foreman, parcel foreman, chargeman	25	
Goods checker, caller-off, number taker, tracer, office man, scaleman, weighbridge man	30	
Goods yard porter	30	
Station porter, carriage, station, signal lamp man	30	
Loader, sheeter, roper	30	
<i>Other Railway Servants</i>		
Foreman, chargeman	25	
Ticket collector, ticket examiner, excess luggage collector	30	
Guard, porter-guard, conductor, train attendant, brakesman, incline man ..	25	
Train, carriage, wagon, brake, &c., examiner	30	
Signal man, porter-signal man	25	
Pointsman	25	
Capstanman	25	
Shunter	25	
Spragger	25	
Crossing keeper, level crossing man, gateman (level crossing)	30	
Chain horse driver, shunt horse driver ..	30	
Railway clerks are also reserved at age 25.		

Petition for Gauge Conversion in South West Africa

(From our South African correspondent)

The people of the Grootfontein district of South West Africa have presented a petition to the Administrator of the Territory for the conversion of the Usakos—Tsumeb—Grootfontein 2-ft. gauge line to the 3-ft. 6-in. gauge, the South African standard. In 1936 the Railway Board visited Grootfontein and, though sympathetic, said the matter was then difficult to consider because of the depression and lack of freight owing to the mines having closed. The petition points out that although the mines have since been working to capacity for a considerable

period, no further steps have been taken. The line was built in 1906 by private enterprise to develop the Damaraland concession. It was purchased by the German Government in 1910, and leased to the Otavi Minien und Eisenbahngesellschaft, which operated the line at considerable profit. It was then contemplated that with an increase of traffic the gauge would be widened, and, had the war not intervened, this would have been done. The line from Usakos was widened by the South African authorities and this, says the petition, has resulted in an expen-

sive system of transhipment. The petitioners contend that the resultant drop in revenue of the copper mines decreased the spending power and the development of the northern parts of South West Africa; also that the South African Railways secured substantial revenue from the narrow-gauge line which was used towards paying the operating costs of the standard-gauge line, and that, because of this the narrow-gauge section was neglected. The petition states further that the continuance of the narrow-gauge line is retarding the development of the Grootfontein district where large areas are available for European settlement and, further, that there is more than sufficient traffic offering from the mines, farming interests, and native labour organisation to warrant the conversion.

TRANSPORT SERVICES AND THE WAR

Reduced passenger train services and facilities—London Transport alterations—Cross-channel services—War effects on overseas railways

From the public viewpoint, by far the most important transport change of the past week has been the curtailment and deceleration—in some cases severe—as from Monday last of passenger train services, but in recording events we propose to continue our practice of previous weeks in adhering to chronological order with home railway affairs, rather than to endeavour to place events in order of interest or importance to any section of the community.

Workmen's Tickets and Air Raid Warnings

The air raid warning given in the London area about 6.45 a.m. on September 6, which was not cleared until approximately 9.15 a.m., inflicted some hardship on customary users of workmen's tickets. At some suburban stations passengers had booked before the warning was given, but were unable to board a train until after the period during which workmen's tickets are available. They were required to pay excess on their tickets up to the full fare. It was to be expected that local booking clerks and ticket collectors, suddenly confronted with this new situation, should protect themselves by keeping to the letter of the regulations and charging the excess. Nevertheless, the unfortunate workmen naturally felt aggrieved. The extension of the period for the issue of workmen's tickets after an early morning air raid has been considered by the Railway Executive Committee so that a general policy might be adopted by the main-line railway companies and the London Passenger Transport Board. In the House of Commons on Wednesday evening, September 13, the Minister of Transport announced that it had been decided that, in the event of air-raid warning signals being given during the time that holders of workmen's tickets were usually conveyed, those tickets would be available for issue for a period of 20 min. from the sounding of the "all clear" signal.

Use of Syrens and Whistles

The Ministry of Information announced on September 7 that an order had been issued under the Defence Regulations forbidding anyone to sound within public hearing any siren, hooter, whistle, rattle, bell, horn, gong, or similar instrument, except in accordance with directions by the local authority or chief constable for air-raid warning purposes. There are certain necessary exceptions, of course, and the order, however, does not affect the use of such instruments by railwaymen and by members of a ship's crew.

White Labels for Goods

The Railway Executive Committee announced, on the morning of September 8, that, in order to facilitate the handling of traffic in the interest both of the traders and the railway companies, goods rendered for conveyance by rail on and after September 8, must, during the period of emergency lighting, bear a white label clearly addressed in black ink or type. Railway consignment notes also must be typed clearly or written in black ink.

Message to Southern Railway Staff

The text of the following message, which has been sent to every member of the Southern Railway staff by the General Manager, Mr. Gilbert S. Szlumper, was made public on September 8:—

"At this moment of stress I just want to say I am proud to be your leader, proud at the magnificent way you have carried out the evacuation and A.R.P. schemes and all that you have so far been called upon to do in every department, and I know I shall be proud of the way you will carry out the many heavy and important duties that lie before each and every one of you—on the successful performance of which much of the welfare of our country will depend. Keep stout hearts and cheerful faces, keep as fit and well-nourished as you can, obtain all the rest you can, and so let the Southern family play its part in helping this grand free country sweep the oppressor from the earth. I and my officers wish you and your families good luck in all you do."

London Transport Services

The Railway Executive Committee announced through the Ministry of Information, on September 7, that the section of the London Transport Northern Line running between London Bridge and Moorgate was closed from that day. The section between Kennington and Strand has been closed since September 1, as we recorded at page 358 last week. Extra buses are being placed on bus routes serving Moorgate, Bank, and London Bridge; railway tickets are available on the bus services between London Bridge and Moorgate. Until further notice the Northern Line trains will operate only between Morden and London Bridge; Moorgate and East Finchley and Edgware; Morden and Kennington; and Strand and East Finchley and Edgware.

There has been some misunderstanding regarding the reasons for the closing of 19 tube stations from September 1. The London Passenger Transport Board was compelled to take certain safety precautions to eliminate the risk of any sudden flooding of the tube tunnels through the bursting of water mains or sewers where these pass through, or are adjacent to, the board's stations. Certain protective works are temporary only and careful review is being given to the execution of permanent works which may permit the re-opening of certain stations. Others will have to remain closed indefinitely. The tube stations at present closed are:—

Arsenal, Balham, Bank (Northern and Central Lines), Bond Street, Chancery Lane, Charing Cross (Bakerloo and Northern Lines), Clapham Common, Green Park, Hyde Park Corner, King's Cross (Piccadilly and Northern Lines), Knightsbridge, Maida Vale, Marble Arch, Old Street, Oval, Oxford Circus, Tottenham Court Road, Trinity Road, and Waterloo (Northern Line).

The London Passenger Transport Board issued a poster at the beginning of the crisis, for display prominently outside every tube station, to the following effect:

"*War Emergency.*—Underground Stations Must Not Be Used As Air Raid Shelters. The public are informed that in order to operate the Railways for essential movement, Underground Stations cannot be used as air raid shelters. In any event a number of stations would have to be cleared for safety in certain contingencies."

It has been stated officially that there will be little change at present in the railway services of the London Passenger Transport Board on outlying sections of the line. Curtailment of services will apply mainly to the inner area during the slack period of the day and after 8 p.m. Peak-hour road services will be substantial and the main restrictions of service will apply to the black-out period. Members of the public have also been advised that season tickets to Marylebone, L.N.E.R., or Baker Street, are, since September 11, available to either station.

Message to London Transport Board

The following message from Lord Ashfield, Chairman of the London Passenger Transport Board, was issued on September 7 to the officers and staff of the board:—

"The evacuation of the children, mothers, hospital patients, and blind persons from the London Area has now been completed without a single mishap of any sort. The successful manner in which the evacuation was carried out has been praised on all sides, and to this success the staff of the board made a notable contribution. The board is proud to have been associated with this great task and is especially proud of the way in which the staff carried out their responsibilities. It is therefore the wish of each member of the board that I should ask you to accept our very warmest thanks and appreciation for this splendid record of a great task well and truly done."

Reduced Passenger Train Services

The following announcement was issued by the Railway Executive Committee on September 7 through the Ministry of Information:—

"In order to meet the heavy demands which are being made on all the services of the main-line railways at this time it

will be necessary to make further curtailments in the passenger train services, commencing on Monday, September 11.

"Restaurant cars will be suspended, but arrangements are being made for snack boxes to be available at the more important stations.

"It will also be necessary to curtail sleeping-car accommodation considerably.

"For the time being, particulars of the passenger train services will be posted at the railway stations and passengers are requested to consult these for information and in order to keep the telephone lines clear to refrain as far as possible from making telephone inquiries."

The reservation of seats and compartments has been discontinued.

Cheap day and excursion tickets were cancelled from September 11, but monthly return, week-end, season, and traders' tickets continue to be issued. Return tickets expiring at any date in September have had their availability extended to the end of the month.

The General Secretary of the United Kingdom Commercial Travellers' Association was informed by the railway authorities on September 12 that commercial travellers' day, overnight, and week-end tickets will continue to be issued as hitherto for the present.

Great Western Railway.—A false impression was created in many quarters by press statements that the G.W.R. was unaffected by the changes and was "continuing present services for at least another week." Actually the G.W.R. made important alterations before September 11, and the position is that this company is running during the present week the restricted service introduced for the evacuation period. A new timetable will come into operation next Monday (September 25) which is expected to provide a considerably better service. This situation applies both to the main-line and to the suburban traffic. At present the Cornish Riviera train is leaving at 10 a.m. instead of 10.30, and the whole train runs through to Penzance.

Southern Railway.—So far as main-line services are concerned, the numbers of trains on the principal routes are as follows:—

	Weekdays	Sundays
Folkestone, Dover, and Deal ..	8	4
Kent Coast	7	4
Tunbridge Wells	8	3
Bournemouth	6	2
Salisbury	5	4
Weymouth	3	1
Exeter	3	2
Plymouth	2	1
Bude	2	1
Padstow	1	0
Brighton	41	23
Eastbourne and Hastings ..	7	5
Worthing	5	5
Bognor Regis	5	2
Portsmouth	12	9

Moreover, the trains are running to slower schedules, and long-distance trains are making many intermediate stops so as to replace separate services heretofore catering for local needs. So far as Southern suburban services are concerned, these also have been reduced by from 50 to 70 per cent., although they have not been slowed down.

L.M.S.R. and L.N.E.R.—Drastic reductions have been made on both main-line and suburban services and only a few sleeping cars are running on the long-distance trains from London. Through trains between London and Edinburgh are now provided only by the L.N.E.R. Following are, in brief outline, the principal main-line services from London:—

L.N.E.R. MAIN LINE

King's Cross to Scotland: 10 a.m., to Edinburgh; 7 p.m. to Aberdeen; 9.30 p.m. to Edinburgh. The last two trains have limited sleeping accommodation.

King's Cross to Newcastle, 12.30 p.m. and 9.40 p.m.; to Leeds, 10.30 a.m. and 5 p.m.

Liverpool Street to Ipswich, Norwich, and Yarmouth, 8.12 and 10 a.m., 1 p.m., 4 p.m., and 5.12 p.m.

Trains for Clacton will leave on week-days at 3.43 p.m., 4.57, except Sat., and 6 p.m.

On the Cambridge line trains will leave Liverpool Street for Ely at 7 a.m. and 1 p.m., for Hunstanton and Norwich at 8.20 a.m., 11.55 a.m., 2.20 p.m. and 5.49 p.m., and for Bishop's Stortford at 9.10 a.m., 5.20 p.m., 7.48 p.m. and 9.14 p.m. There will be a train at 3.55 p.m. for King's Lynn.

L.M.S.R. FROM EUSTON

Windermere, 6.50 a.m.; Rugby, 7.35; Holyhead, 8.45; Glasgow and Perth, 10; Liverpool and Manchester, 10.20; Carlisle, 10.40; Wolverhampton, 11.30; Crewe, 12.5 p.m.; Rugby, 12.15; Manchester, 2.40; Rugby, 3.6; Northampton, 4.15; Wolverhampton, 4.30; Heysham, 4.50; Stafford, 5.10; Liverpool and Manchester, 5.30; Northampton, 6.6; Wolverhampton, 7.10; Northampton, 7.15; Inverness, 7.30, not Sats.; Holyhead, 8.50; Glasgow, 9.25; Carlisle, 10.55, not Sats.; Perth, 10.55, Sats.; Manchester, 12.2, night.

L.M.S.R. FROM ST. PANCRAS

Manchester, 8.30 a.m.; Leeds and Glasgow, 10.0; Bradford, 12; Manchester, 1.30 p.m.; Bradford, 3.0; Manchester, 5.30; Glasgow, 9.30.

It was officially announced on September 12 that British troops had arrived in France. Their transport to South Coast ports was reported to have been effected by road and rail without a hitch. Trains from Scotland, from the East, and from the West followed each other with a punctuality that spoke highly for the railway arrangements. Day and night the transportation continued, and this feat could not have been achieved while normal passenger services were running. Nevertheless, the curtailment of services caused considerable inconvenience and overcrowding, particularly to passengers who travel daily to business. On the whole, however, it may be said that passengers accepted the conditions of discomfort and delay in good part. To many the amended timetables meant an earlier start from home and sometimes a later arrival at business.

The Railway Executive Committee on Tuesday issued an official statement regretting very greatly the inconvenience which had been caused to the travelling public by the reduction of train services brought into force on Monday. They asked for the forbearance of the public in the matter. The statement continued: "The railways have a very heavy freight and military traffic to deal with which is of an urgent and exceptional character. They have to carry on their night working, when freight serve is mostly handled, under exceptionally difficult lighting conditions. It is essential for the welfare of the country that freight and military traffic should be punctually and efficiently handled. Subject to this the railway companies are doing and will do everything they can to give the public the best passenger service that is within their power. Each company is watching the situation from day to day and will put on such extra trains as working conditions permit. The railways have no desire to limit passenger travel but they are bound to give first place to traffic of an urgent national character."

The L.N.E.R. announced the strengthening on September 12 by 18 additional trains of its emergency suburban services.

Southern Railway Boat Services

The Southern Railway announced on September 7 through the Ministry of Information that the company's services to the Channel Islands and from Newhaven to France were subject to considerable alterations. The Newhaven-Dieppe night service in each direction was cancelled from Thursday night, September 7. From Monday last (September 11) the Channel Islands services are being run only three times a week in each direction. Sailings in each case are on Mondays, Wednesdays, and Fridays, night journeys outwards and day journeys inwards. A Paris message issued on September 7 said that far-reaching changes in the timetable were being introduced immediately between Britain and France. Trains would start at entirely different times, and it would take longer to complete the journey. The Southern Railway announced, on September 11, that the cross-Channel boat services until further notice would be:—

Folkestone-Boulogne, Victoria depart 9 a.m.; Folkestone-Calais, daily, passengers make own way to Folkestone; Folkestone-Ostend, Victoria depart 1 p.m. Newhaven-Dieppe, Victoria depart 8.20 p.m.; Southampton-Havre, daily and Sunday, Waterloo depart 9 p.m. Southampton-Channel Isles,

Monday, Wednesday, Friday, Waterloo depart 9 p.m.; Jersey-St. Malo, one service weekly from Jersey, Tuesday.

Clyde Sailings Curtailed

The London & North Eastern Railway Company announced, on September 5, that its steamer sailings to and from the Clyde *via* Craigendoran would operate only between Craigendoran and Dunoon, Greenock, and the Gareloch, and even to these places the services would be curtailed.

Irish Channel Services

An Eire Government order, announced on September 6, makes it unlawful for any Irish ship of 100 tons gross tonnage or upwards—passenger or cargo ship, tanker or fishing boat—to sail from any port in Eire or elsewhere, from Monday, September 18, except by licence of the Minister for Industry and Commerce.

The British & Irish Steam Packet Company on Saturday last, September 9, stated that the sailings to and from Liverpool and other ports have been suspended indefinitely. The other companies operating similar cross-Channel services are operating without any stoppage. These are the London Midland & Scottish Railway, the Great Western Railway, and the Clyde Shipping Company.

Journeys from Northern Ireland to Great Britain

Under Defence Regulations (Passenger Traffic Order), 1939, as applied by the Passenger Traffic (Northern Ireland) Order, 1939, all passengers travelling from Northern Ireland to Great Britain after September 7 must hold one of the following documents bearing an exit permit granted by or under the authority of the permit office:—

For British Subjects—A valid passport; or a travel permit card obtainable in London, Liverpool, Cardiff, or Glasgow; or a travel permit card issued by the authorities in the Channel Islands, Eire, Isle of Man, or Northern Ireland.

For Persons who are not British Subjects—A valid passport; or a Home Office (London) document of identity; or a police registration certificate. The fee for the issue of a travel permit card is 5s. At least 10 days' notice should be given, and personal attendance will normally be required. In no circumstances can the permit office give reasons for the grant or refusal of a permit.

Restrictions on Photography

Important restrictions upon photography are contained in an order made by the War Office and announced by the Minister of Information on September 11. A permit must be granted before a person can photograph, sketch, plan, or make any other representation of any of a lengthy list of objects, mainly of direct military import, but also including any "aerodrome or seaplane station; dock, caisson, dockyard, harbour, shipbuilding works, or loading pier; vessel of air or any vessel or vehicle engaged in the transport of supplies or personnel; aircraft or the wreckage of any aircraft; assembly of persons for transport or evacuation, or transport vehicles used for evacuation; roads or railways exclusively connected with works or defence." The photographic restrictions also apply to any object damaged by enemy action or as a result of any steps taken to repel enemy action.

Overseas Railways and the War

It was announced from Simla on Saturday last (September 9) that the Government of India had created a War Transport Board for the control and co-ordination of road, rail, and sea transport. Sir Guthrie Russell, Chief Commissioner of Railways, Indian Railway Board, has been appointed President.

A message from Tokyo, despatched on Friday last, said that Japan had decided to suspend at once the sale of through passenger and freight tickets to European countries, *via* the Trans-Siberia Railway. The Japan-Paris route (*via* Siberia, East Prussia, and Berlin), and the Japan-Scandinavia route (*via* Siberia and Estonia) are among those involved.

It was reported on Saturday last (September 9) that Soviet Russia had ordered a part mobilisation. Reservists are stated to have been called-up in Moscow and Leningrad, and it is added that some Leningrad trains were requisitioned by the military command. An Exchange Telegraph message

said that at one White Russian railway station a heavily-loaded passenger train was observed to depart for Minsk, the capital of the White Russian Republic (adjoining Poland), and that apparently most of the passengers were reservists. This part mobilisation is considered to be intended for strengthening western frontier garrisons, which were recently depleted by extensive troop movements, *via* the Trans-Siberian Railway, to the Far East.

According to Rome advices, from Friday last (September 8) three trains a day, including sleeping cars, are being run from Rome to Paris, and two in the opposite direction. The service between Italy and Switzerland has also been partly restored. On the same date the Simplon-Orient express (which, since August 30, has been running from Istanbul only as far as Milan), was extended to Paris, where the first through train arrived on Saturday, September 9. The first through train in the other direction left Paris on September 7 for Milan, Belgrade, and Istanbul.

A special train from Geneva on Wednesday last (September 13) was put at the disposal of about 600 English holiday-makers stranded in Switzerland and of those British residents wishing to return to England.

In France, the tremendous call upon communications of every kind, inseparable from a general mobilisation, naturally led to some dislocation at first, and trains were delayed. In Paris the bus services were—and still are—almost entirely suspended, underground railway services have been reduced ruthlessly, and in some cases suspended, though the general service has been extended to cover the entire 24 hours. Suburban trains, though heavily reduced in frequency, have remained admirably punctual and, generally, have proved adequate. There is now a limited, but effective, train service for both passengers and goods. Petrol is plentiful and is nowhere rationed.

Stories are reaching this country of frantic scenes in large Berlin railway stations as 10 p.m. on August 27 drew near—the last hour up to which the Reichsbahn was willing to guarantee transport. Every corner in the trains was occupied; and passengers also rode in luggage vans. Since that date, the railways of both Germany and Poland have, of course, been devoted primarily to military requirements, but we gather that (contrary to some newspaper reports) in neither country has ordinary passenger traffic been abandoned. At the moment it is impossible to secure reliable information regarding the extent of the damage to railways and railway properties which has resulted from the German invasion of western Poland. Reports issued officially by Poland deny a number of the claims promulgated by the Official German News Agency, but it is clear that, despite strenuous Polish resistance, German troops have occupied approximately the whole Polish territory included within the 1914 German boundaries. Among the railway stations reported to have been destroyed by fire are Zdunska Wola, Skarzysko, Tarnow, and Wreschen.

On Thursday of last week, September 7, the Official German News Agency stated that the Reichsbahn Divisional Management in Stettin had established two German railway offices in Konitz (Chojnice) and Berent (Koscierzyna); and that there will also be a locomotive depot at Konitz. Both these towns lie within the Corridor not far from the German frontier. Berent is midway between the frontier and the westernmost tip of Danzig territory, while Konitz is only a couple of miles from the German border, some 37 miles south-west of Berent.

Air Lines

Although most internal air lines ceased running owing to the outbreak of war, the Government granted Allied Airways (Gandar Dower) Limited, Aberdeen Airport, Dyce, special permission to operate its services in the national interest. These services are regarded as being sufficiently far north to be safe. Actually, Allied Airways discontinued operating for one day only, Saturday, September 2, which was the first day's cancellation of services since the company began working in May, 1935. Services are being run from Aberdeen to Wick, Thurso, Stromness, and Kirkwall, but for the present the Orkney-Shetland route is suspended.

The Belgian (Sabena) Air Lines resumed the service between England and Belgium on September 7, after a lapse of a week, along a narrow air corridor from Shoreham, but after a few days the service was cancelled.

British Canal Traffics

Comparative tonnages for three six-monthly periods

We have received from the Ministry of Transport statements showing the tonnages of goods and minerals conveyed over canals and waterways in Great Britain (excluding the Manchester Ship Canal) during the six months ended June 30 in each of the years 1937, 1938, and 1939.

Figures of the different classes of traffic are grouped under ten headings. On the railway-owned canals the largest tonnages were coal, coke, patent fuel, and peat, of which 238,521 tons were carried in the 1939

period, against 226,614 in the 1938 period, and 257,894 in the 1937 period. Liquids in bulk provided 96,529 tons in 1939, compared with 89,754 in 1937 and 88,617 in 1938. Agricultural produce and foodstuffs showed the heavy drop from 106,890 tons in 1937, to 94,887 in 1938, and 46,569 in 1939, and the tonnage of building materials (other than wood) was 89,551 tons in 1937, against 57,929 in 1938, and 66,290 in 1939. Industrial products fell from 41,844 tons in 1937 to 34,875 in 1938, and 32,406 in 1939.

On canals other than railway-owned, the tonnage of coal, coke, patent fuel, and peat fell from 3,282,450 in the 1937 period to 2,980,357 in the 1938 period, and 2,957,290 in the 1939 period. Building materials, which had gone up from 454,917 tons in 1937 to 502,962 tons in 1938, fell to 444,964 in 1939, and a similar course was followed by liquids in bulk which went up from 531,485 tons in 1937 to 576,330 tons in 1938, and dropped to 479,076 tons in 1939. Raw materials and industrial products show a general downward tendency. In the 1937 period raw materials provided 551,568 tons, but only 462,105 tons in 1938, and 418,970 in 1939. The tonnage of industrial products was 530,544 in 1939, against 538,756 in 1938, and 594,866 in 1937.

Canal or Waterway	Six months ended June 30		
	1937	1938	1939
Railway-Owned			
<i>Southern Railway:—</i>	Tons	Tons	Tons
Gravesend & Higham	15,152	10,202	12,196
<i>Great Western Railway:—</i>			
Kennet & Avon	6,900	6,908	7,156
Monmouth, Brecon, and Abergavenny... ..	42	38	—
Stourbridge Extension	15,155	14,620	10,063
Stratford-on-Avon	1,030	28	—
<i>London Midland & Scottish Railway:—</i>			
Ashby	7,697	8,732	9,140
Cromford	7,700	8,285	9,834
Forth and Clyde	50,561	46,909	47,375
Huddersfield	8,321	8,052	7,596
Lancaster (North End)	8,895	16,263	15,012
Manchester, Bolton & Bury	47,259	42,534	41,868
Shropshire Union	130,540	109,408	117,946
St. Helens	50,729	45,064	40,171
Trent & Mersey	157,722	146,775	138,797
<i>London & North Eastern Railway:—</i>			
Ashton, Macclesfield and Peak Forest	18,764	15,208	23,093
Boroughbridge and Ripon	31,945	29,590	33,250
Chesterfield	9,129	8,633	9,356
Fossdyke Navigation	33,123	30,930	26,725
Nottingham	44,109	(b)	(b)
Union	240	105	26
Witham	787	914	1,222
<i>Southern, G.W. and L.M.S. (Jt.):—</i>			
Kensington	121,489	94,570	98,488
<i>L.M.S. and G.W. Jt. Committee:—</i>			
Lydney Harbour & Canal	91,151	95,348	96,990
Total (a)	649,246	560,575	532,530
Other Than Railway-Owned			
Aire & Calder	1,436,571	1,255,400	1,245,420
Birmingham	1,270,558	1,095,198	1,040,376
Bridgewater	544,922	532,377	536,827
Calder & Hebble	132,113	132,559	138,185
Caledonian	7,366	19,779	12,852 (c)
Coventry	184,291	205,136	193,389
Crinan	36,338	40,953	45,103
Glamorganshire	41,292	47,210	55,894
Gloucester & Berkeley	241,566	260,853	281,971
Grand Union	1,032,830	918,640	895,838
Lee Navigation	901,354	904,090	967,980
Stort Navigation	2,586	1,747	3,808
Leeds & Liverpool	797,006	741,495	739,881
Oxford	182,119	201,732	198,548
Rochdale	15,235	10,312	10,679
Severn Commission	156,774	169,068	187,277
Sheffield & South Yorkshire	406,775	398,359	348,814
Staffordshire & Worcestershire	240,261	204,692	211,011
Stourbridge	35,915	33,677	26,631
Stroudwater	567	526	426
Thames (above Teddington)	136,101	129,487	122,378
Trent Navigation	284,038	291,194	302,783
Weaver	330,870	274,351	306,969
Worcester & Birmingham	71,772	67,705	58,405
Total (a)	6,631,327	6,085,153	5,774,586
Grand total (a)	7,280,573	6,645,728	6,307,116

(a) In these totals the tonnage of traffic conveyed over more than one canal or waterway has been counted once only and the figures therefore represent the tonnage originating (1) on all railway-owned canals and waterways; (2) on all canals and waterways other than railway-owned, and (3) on all canals and waterways, irrespective of ownership.

(b) Leased to Trent Navigation Company as from October 1, 1937.

(c) Canal close 1 for general repair from April 3 to May 31, 1939.

Railway Ambulance Service in New Zealand

A new activity on the part of the New Zealand Government Railways Department was the recent establishment of the Wellington Railway Nursing Division, the first women's division attached to the railways in the Dominion. Railway ambulance classes in New Zealand date back to 1885, and ten years later classes were being held in several of the larger centres.

Speaking at the opening of the new nursing division, Mr. Mackley, the General Manager, said that from 1895 to 1927 the ambulance classes continued to gain in popularity, and in the latter year, as a result of representations from the leading members of the St. John Ambulance Brigade, a scheme was inaugurated whereby the strength and number of the railway ambulance classes was greatly augmented.

The department, he said, now accepted liability for lectures and examiners' fees for each class annually, and also supplied equipment necessary for the conduct of classes. In cases where members desired to undergo instruction and no railway class was available, the department paid the fees of members who attended outside classes, if they were successful in the first aid examination. Certificates, bars, and medallions were supplied free of charge to those who qualified by examination.

Free passes and leave with pay were granted to a team from any division to enable members to compete in the annual St. John Ambulance Brigade competitions, and the results which had been achieved by railway divisions amply demonstrated the keenness displayed, and the high standard attained by the railway teams. Fees paid and cost of equipment supplied during the last eight years had amounted to more than £2,500, and as the movement was one deserving of the highest praise, the department was prepared to assist active members of it to the fullest possible extent.

NOTES AND NEWS

Engineering and Marine Exhibition.—This exhibition, which was to have been held at Olympia from September 14 to 30, has been cancelled.

Fuel Economy in Argentina.—The railways in Argentina are reported to have been warned officially to economise in fuel. The numerous diesel railcars and most of the steam locomotives burn home-produced oil.

Chinese Traffic Interruption.—Railway service between Tientsin and Tangku was suspended for over a week from August 25 because of floods. Traffic between Mukden and Peiping, suspended for the same reason, has also been resumed.

"L.M.S. Magazine" Suspended.—We are officially informed that in the interests of national economy only, it has been decided to discontinue publication of the *L.M.S. Magazine* after the present September issue which has now been distributed.

Argentine Railway Earnings.—The gross earnings of the privately-owned Argentine railways for the first eleven months (July-May) of the financial year 1938-39 amounted to 370,820,000 pesos m/n., only 686,000 pesos, or 0.2 per cent., less than the corresponding period of the previous financial year. The earnings of the British-owned railways, included in the above figures, were 336,501,000 pesos, that is, 2,151,000 pesos, or 0.6 per cent., less. The recovery in goods traffic was maintained and for the first time in the year an increase was recorded under this head of 4,267,000 pesos, or 1.8 per cent. On the other hand, the decrease in passenger receipts was again greater, amounting to 3,835,000 pesos, or 4.6 per cent., although the number of passenger journeys was 2.9 per cent. higher.

Institute of Transport.—The inaugural meeting of the Institute of Transport will be held on October 9 as already announced, at Charing Cross Hotel, at 2.30 p.m. The Annual General Meeting will be held on December 11. The rest of the meetings will be suspended but every endeavour will be made to resume the holding of meetings later and generally to maintain the activities of the Institute, even if in a modified form.

Irish Traffic Returns

IRELAND		Totals for 35th Week			Totals to Date				
		1939	1938	Inc. or Dec.	1939	1938	Inc. or Dec.		
Belfast & C.D.	pass.	£ 3,564	£ 3,345	+	£ 219	95,908	92,985	+	2,923
(80 mls.)									
" "	goods	561	437	+	124	15,394	15,034	+	360
" "	total	4,125	3,782	+	343	111,302	108,019	+	3,283
Great Northern	pass.	16,900	16,400	+	500	406,300	395,650	+	10,650
(543 mls.)									
" "	goods	12,450	10,700	+	1,750	353,750	310,800	+	42,950
" "	total	29,350	27,100	+	2,250	760,050	706,450	+	53,600
Great Southern	pass.	50,892	51,011	—	119	1,309,958	1,309,270	+	688
(2,076 mls.)									
" "	goods	44,896	39,397	+	5,499	1,401,636	1,358,322	+	43,314
" "	total	95,788	90,408	+	5,380	2,711,594	2,667,592	+	44,002
L.M.S.R.									
Northern Counties									
total		8,810	7,970	+	840	271,500	262,130	+	9,370

IRELAND		Totals for 36th Week			Totals to Date		
		1939	1938	Inc. or Dec.	1939	1938	Inc. or Dec.
Belfast & C.D. (80 mls.)	pass.	£ 2,681	£ 2,763	— £ 82	£ 98,589	£ 95,748	+ £ 2,841
“ “	goods	446	440	+ 6	15,840	15,474	+ 366
“ “	total	3,127	3,203	— 76	114,429	111,222	+ 3,207
Great Northern (543 mls.)	pass.	14,350	14,650	— 300	420,650	410,300	+ 10,350
“ “	goods	10,000	9,200	+ 800	363,750	320,000	+ 43,750
“ “	total	24,350	23,850	+ 500	784,400	730,300	+ 54,100
Great Southern (2,076 mls.)	pass.	56,503	50,270	+ 6,233	1,366,461	1,359,540	+ 6,921
“ “	goods	50,634	41,667	+ 8,967	1,452,270	1,399,989	+ 52,281
“ “	total	107,137	91,937	+ 15,200	2,818,731	2,759,529	+ 59,202
L.M.S.R. †Northern Counties	total	—	—	—	—	—	—

† Returns not available

British and Irish Railway Stocks and Shares

Stocks	Highest 1938	Lowest 1938	Prices	
			Sept. 12, 1939	Rise/ Fall
G.W.K.				
Cons. Ord. ...	65½	25½	24½	—
5% Con. Prefce....	118½	74	80	—
5% Red.Pref.(1950)	111½	90	92½	—
4% Deb.	111	97½	93½	—
4½% Deb....	112½	100½	96½	—
4½% Deb....	118½	104	102½	—
5% Deb.	131½	119	112½	—
2½% Deb....	69½	60	56½	—
5% Rt. Charge ...	129	114	106	—
5% Cons. Guar. ...	128½	103	99½	—
L.M.S.R.				
Ord.	30½	11	10	—
4% Prefce. (1923)	70½	23	36	—
4% Prefce.	82½	43½	49½	—
5% Red.Pref.(1955)	103½	66	76	—
4% Deb.	105½	85	87½	—
5% Red.Deb.(1952)	114½	105	104	—
4% Guar.	102½	77½	78	+
L.N.E.R.				
5% Pref. Ord. ...	89½	31½	4	—
Def. Ord.	47½	21½	2½	—
4% First Prefce. ...	68½	21	29½	—
4% Second Prefce. ...	27½	8	9½	—
5% Red.Pref.(1955)	97	40½	45	—
4% First Guar. ...	97½	66½	63½	+
4% Second Guar. ...	91½	52	55½	—
3% Deb.	79½	60	59½	—
4% Deb.	104½	77	79	—
5% Red.Deb.(1947)	110½	97	102½	—
4½% Sinking Fund Red. Deb.	108½	101	98	—
SOUTHERN				
Pref. Ord.	87	47½	53	—
Def. Ord.	21½	9½	8	—
5% Pref.	115	83	80	—
5% Red.Pref.(1964)	115½	98	97½	—
5% Guar. Prefce. ...	128½	106	105	—
5% Red.Guar.Pref. (1957)	116	108½	105	—
4% Deb.	109½	95	93½	—
5% Deb.	129	117	112½	—
4% Red. Deb. 1962-67	107	101½	101½	—
BELFAST & G.D.				
Ord.	4	3½	4	—
FORTH BRIDGE				
4% Deb.	102	99½	83½	—
4% Guar.	103½	94½	82½	—
G. NORTHERN (IRELAND)				
Ord.	5½	2½	4	—
G. SOUTHERN (IRELAND)				
Ord.	25½	8½	9½	—
Prefce.	35	13	10	—
Guar.	70½	30½	25	+
Deb.	83	56	48	+
L.P.T.B.				
4½% "A"	119½	107½	103	—
5% "A"	130	117	107	—
4½% "T.F.A." ...	108	98	101	—
5% "B"	122½	105	102	—
"C"	84	68	65	—
MERSEY				
Ord.	24½	16½	22	—
4% Perp. Deb.	102½	94½	90	—
3% Perp. Deb. ..	77	69	65½	—
3% Perp. Prefce.	66½	57	52½	—

OFFICIAL NOTICES

Ministry of Supply

The Royal Arsenal, Woolwich. Royal Ordnance Factories

ASSISTANT TRANSPORT OFFICER REQUIRED

CANDIDATES must be fully qualified mechanical engineers with experience of controlling transport (railways, petrol and steam lorries, electric trucks, etc.) and of maintenance of permanent way. Experience of explosives transport an advantage.

Age limits, 30 to 45, but upper limit may, if necessary, be extended in the case of candidates serving with Government Departments, who should apply through the Heads of their Establishments.

Salary £400 with annual increments for approved service, of £18 to £472 and thence by £25 to £550, whilst the post continues. The post is unpensionable. Preference given to ex-Service candidates, other things being equal.

Application forms obtainable from the Chief Superintendent of Ordnance Factories (Advt. No. 292), Royal Arsenal, Woolwich, S.E.18, to be lodged by 25.9.39.

OFFICIAL ADVERTISEMENTS

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is noon on Thursday. All advertisements should be addressed to:—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

The Institute of Transport Examinations, 1940

NOTICE IS HEREBY GIVEN that the Graduateship and Associate Membership Examinations will be held on Monday, Tuesday and Wednesday, May 6th, 7th and 8th, 1940.

The latest date for the deposit of forms of entry is March 31st, 1940 (January 1st if any exemptions are claimed). Full particulars, previous question papers (price 1s. per set, post free) and copies of a revised and enlarged edition of the booklet "The Institute of Transport Examinations: notes for the guidance of candidates unable to attend preparatory courses" (price 2s. 6d., post free) may be obtained from the undersigned.

By Order of the Council,
A. WINTER GRAY,
Secretary.

Royal State Railways of Thailand (Siam)

NOTICE

SEALED tenders for the supply of Allsteel covered goods wagons will be received by the Superintendent of Stores, Royal State Railways, Bangkok, Thailand (Siam), up to 14.00 o'clock on the 29th December, 1939, at which hour and date they will be privately opened.

Blank tender forms are obtainable from Messrs. Sandberg of St. Margarets, Carlisle Road, Eastbourne, Sussex, and of 25, Broadway, New York, at the price of £10, and U.S. \$50.00 per set respectively.

THE ADMINISTRATION,
Royal State Railways.

London and North Eastern Railway

NOTICE is hereby given that, for the purpose of preparing the Warrants for Interest payable on the 16th October, 1939, on the Company's 5 per cent. Redeemable Debenture Stock, the balance will be struck as at the close of business on 28th September, and such interest will be payable only to those Stockholders whose names are registered on that date.

Transfers of the 5 per cent. Redeemable Debenture Stock should, therefore, be lodged with the Registrar of the Company at Hamilton Buildings, Liverpool Street Station, London, E.C.2, before 5.0 p.m. on 28th September.

By Order:
P. J. DOWSETT,
Secretary.

YORK.
15th September, 1939.

Universal Directory of Railway Officials and Railway Year Book

45th Annual Edition, 1939-40

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CONTRACTS AND TENDERS

The Union Pacific, Southern Pacific, and Chicago & North Western Railroads are to purchase jointly two more 17-car diesel-electric streamlined trains for use between Chicago and California. One of these will replace the *City of San Francisco*, damaged in the accident of August 12.

Heatley & Gresham Limited, Calcutta, has received an order from the Indian Stores Department for 300 sets of gauge glasses and equipment for Klinger-type water gauges.

The New York Board of Transportation has received tenders for 150 passenger coaches with options for 100 and 150 additional cars. Bids received vary from \$41,200 to \$42,425 a car for ordinary steel construction, and \$46,950 to \$48,200 for stainless steel cars.

The Stanton Ironworks Co. Ltd. has ordered a 150-ton walking drag-line from Ruston-Bucyrus Limited. It is to have a 135-ft. boom and a 3 cu. yd. bucket, and, like a similar Ruston-Bucyrus walking drag-line supplied previously, is to be used for the dual purpose of stripping and replacing the subsoil and top soil in the correct positions.

The Bengal-Nagpur Railway is enquiring for over one million standard sal sleepers for broad, metre, and narrow gauge tracks. Tenders have to be in by September 29, addressed to the Sleeper Control Officer, Eastern Group, B.-N. Railway House, Kidderpore, Calcutta.

Tenders are invited by the State of Travancore for the supply of electrical meters and measuring instruments and chemical fire extinguishers. Offers

should reach the Secretary, Stores Purchase Committee, Trwandrum, by October 16.

Tenders for one 80-kW. oil engine alternator set, complete with control panel, for the Paksey power house of the Eastern Bengal Railway. Particulars may be obtained from the Chief Controller of Stores, Indian Stores Department (Electrical Section), Simla, to whom tenders must be sent before October 5.

Tenders for the supply and erection of a double line swing bridge on the Cairo-Alexandria line are invited by the Egyptian State Railways. Tenders must be in by November 1, and specifications may be obtained from the Chief Inspecting Officer, 41, Tothill Street, London, S.W.1.

The Royal State Railways of Thailand (Siam) are inviting sealed tenders for

the supply of all-steel covered goods wagons, which will be received by the Superintendent of Stores, Royal State Railways, Bangkok, Thailand (Siam) up to 2 p.m. on December 29. Blank tender forms are obtainable from Messrs. Sandberg of St. Margarets, Carlisle Road, Eastbourne, Sussex, and of 25, Broadway, New York, at the price of £10 or U.S. \$50.00 a set respectively.

Tenders are invited by October 25, in India, for the supply of ball and roller bearings—tender No. M-5050—by the Chief Controller of Stores, Indian Stores Department, New Delhi.

Tenders for the supply and erection of 66 kV. electric transmission lines, totalling 138 miles, are invited by the Government of Madras. Copies of the specification, No. E.122, can be obtained at a cost of Rs. 30 per set from the Executive Engineer, Electrical and Mechanical Division, Electricity Department, Chepank, Madras.

Exports of Railway Material from the United Kingdom in July

	July, 1939	July, 1938	Seven Months Ending July, 1939	July, 1938
Locomotives, rail..	167,780	115,460	983,935	881,443
Carriages and wagons ..	188,656	129,509	1,096,627	1,679,977
Rails, steel ..	107,869	58,444	498,185	764,961
Wheels, sleepers, fishplates and miscellaneous materials ..	127,729	200,716	983,895	1,285,289

Locomotive and rail exports included the following :—

					Locomotives		Rails	
					July, 1939	July, 1938	July, 1939	July, 1938
					£	£	£	£
Argentina	..	..	..	..	4,875	11,613	4,555	2,974
Union of South Africa	..	..	..	..	—*	—*	13,962	13,847
British India	..	..	..	..	16,044	33,057	15,227	8,806

* Figures not available

Railway Share Market

Business in the stock and share markets has remained largely a matter of negotiation, and consequently wide and nominal prices have continued to rule, although indications are not lacking that steady progress is being made towards freer dealings on the new cash basis. It is not expected, however, that there will be any appreciable improvement of activity on the Stock Exchange until the details of the supplementary Budget are known and sufficient time has elapsed for the significance of wartime legislation and restrictions to be more fully assessed.

As in other sections of the Stock Exchange home railways securities were subject to very little selling. The widespread disposition to await news as to how the companies and stockholders will fare financially under Government control, dominated sentiment, although there is general confidence as to the outcome, and that it is unlikely the net revenues for 1938—one of the worst years experienced by the main-line companies—will be taken as the basis for calculating dividends on the ordinary stocks during the war period. Pending information regarding the position, dealers have

continued to quote unofficial minimum prices for the preference, debentures, and guaranteed securities, and little stock changed hands. Nevertheless, it is contended in many quarters that yields on such stocks as L.N.E.R. first and second guaranteed and L.M.S.R. guaranteed are probably attractive. Holders are not disposed to sell, and no material change in home railway securities can apparently be expected until the plans of the Government are announced.

A certain amount of business was transacted in the junior stocks, but on balance movements were reactionary. Great Western ordinary was 24, and L.M.S.R. ordinary made the lower price of 10, while Southern deferred moved down to 7½ and the preferred ordinary to 53. Nevertheless very little liquidation was reported. Owing, however, to the technical position of markets and the inactive conditions ruling, the tendency is for a small amount of selling to have a disproportionate influence on prices. Dealers are not, of course, quoting unofficial minimum prices for the ordinary stocks, and there seems little doubt that had unofficial minimum prices

not been ruling for the prior charges, the latter would also have moved against holders. London Transport "C" was around 66½, sentiment having been assisted by the knowledge that, although the undertaking is now under Government control, the results for the financial year ended June 30 are to be published. It is being assumed in the market that the dividend on the "C" stock will probably again be made up to 4 per cent. by a final payment of 2½ per cent., and that the results will be issued early in October.

Hopes that war requirements will result in increased demand for Argentine products, thus assisting a better trend in the traffics of the Argentine railways, have been reflected by sharp gains in the ordinary stocks of the B.A. Gt. Southern, Central Argentine, and other leading companies. The preference stocks also rallied, but the rise in prices was probably out of proportion to the amount of buying. B.A. Gt. Southern 4 per cent. debentures improved to 51½, and B.A. & Pacific 4½ per cent. debentures moved up to 32. Canadian Pacific common were again higher in sympathy with the trend in American railway shares.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

Railways	Miles open 1938-39	Week Ending	Traffic for Week		No. of Weeks	Aggregate Traffics to Date			Shares or Stock	Prices						
			Total this year	Inc. or Dec. compared with 1938		Totals		Increase or Decrease		Highest 1938	Lowest 1938	Sept. 12, 1939	Yield % (See Note)			
						This Year	Last Year									
South & Central America	Antofagasta (Chili) & Bolivia	834	3.9.39	£ 17,450	+	£ 4,430	35	456,690	541,520	-	£ 84,830	Ord. Stk.	14	71½	8	Nil
	Argentine North Eastern ..	753	26.8.39	12,506	+	285	9	93,504	87,134	-	3,630	"	61½	2	31½	Nil
	Bolivar	174	Aug. 1939	4,900	+	1,000	34	34,050	30,150	+	3,900	6 p.c. Deb.	8	7	7	Nil
	Brazil										Bonds	10	4	51½	91½	
	Buenos Ayres & Pacific ..	2,801	2.9.39	75,310	+	6,451	10	699,070	678,042	+	21,028	Ord. Stk.	61½	31½	41½	Nil
	Buenos Ayres Central ..	190	19.8.39	\$124,300	+	\$8,200	8	\$912,300	\$878,900	+	\$33,400	Mt. Deb.	151½	8	11	Nil
	Buenos Ayres Gt. Southern	5,082	26.8.39	118,548	-	5,894	9	966,315	1,039,393	-	73,078	Ord. Stk.	175½	81½	91½	Nil
	Buenos Ayres Western ..	1,930	26.8.39	39,702	+	3,474	9	340,819	313,584	+	27,235	"	125½	5	7	Nil
	Central Argentine	3,700	26.8.39	122,881	+	16,336	9	1,054,025	867,985	+	196,041	"	131½	5½	7	Nil
	Do										Dfd.	6	21½	21½	Nil	
	Cent. Uruguay of M. Video	972	19.8.39	15,153	-	835	8	119,843	124,646	-	4,803	Ord. Stk.	3	14	1	Nil
	Costa Rica	188	June 1939	25,240	-	6,129	52	270,756	314,399	-	43,643	Stk.	28	22½	22½	87½
	Dorada	70	Aug. 1939	1,700	-	2,600	34	32,500	36,200	-	3,700	1 Mt. Db.	105½	104	102½	57½
	Entre Rios	810	26.8.39	17,407	+	707	9	143,610	133,020	+	10,590	Ord. Stk.	71½	31½	5	Nil
	Great Western of Brazil ..	1,092	2.9.39	7,700	+	2,200	35	278,400	227,600	+	50,800	Ord. Sh.	3/-	1/-	14	Nil
	International of Cl. Amer.	794	July 1939	\$463,615	+	\$19,287	30	\$3,697,627	\$3,454,817	+	\$242,810	"	—	—	—	—
	Interoceanic of Mexico ..											1st Pref.	6d.	6d.	1½	Nil
	La Guaira & Caracas ..	22½	Aug. 1939	7,435	+	2,345	34	49,355	40,670	+	8,685	Stk.	8	61½	71½	Nil
	Leopoldina	1,918	26.8.39	23,086	+	3,463	34	672,620	666,493	+	6,127	Ord. Stk.	4	1	1½	Nil
	Mexican	83	21.8.39	\$286,000	+	\$35,500	8	\$2,003,100	\$1,988,800	+	\$14,300	"	1½	1½	1½	Nil
Midland of Uruguay ..	19	July 1939	9,153	+	74	4	9,153	9,227	-	74	"	7½	1½	1½	Nil	
Nitrate	386	31.8.39	4,903	+	98	34	80,102	101,162	-	21,060	Ord. Sh.	52/9	19½	15	71½	
Paraguay Central	274	2.9.39	\$3,785,000	+	\$625,000	10	\$32,409,000	\$30,695,000	+	\$1,714,000	Pr. Li. Stk.	60	55½	40½	141½	
Peruvian Corporation ..	1,059	Aug. 1939	61,433	-	12,254	9	125,839	147,742	-	21,903	Pref.	55½	14½	1	Nil	
Salvador	100	26.8.39	\$10,400	+	444	9	485,834	\$104,349	-	\$18,485	Pr. Li. Db.	23	20	19½	Nil	
San Paulo	153½	3.9.39	29,167	-	4,773	35	1,098,944	1,159,954	-	61,010	Ord. Stk.	64	28	22½	87½	
Taltal	160	July 1939	1,555	-	1,955	5	1,555	3,510	-	1,955	Ord. Sh.	15½	1½	1½	10	
United of Havana	1,353	2.9.39	21,933	+	2,029	10	151,664	155,958	-	4,294	Ord. Stk.	35½	1½	3½	Nil	
Uruguay Northern	73	July 1939	800	-	108	4	800	908	-	108	Deb. Stk.	2	1	2	Nil	
Canada	Canadian National	23,698	31.8.39	1,175,677	+	35,175	34	23,920,126	22,497,561	+	1,422,565	—	—	—	—	—
	Canadian Northern		—	—	—	—	—	—	—	—	4 p.c.	—	—	—	—	—
	Grand Trunk		—	—	—	—	—	—	—	—	Perp. Dbs.	72	60	64½	65½	
Canada	Canadian Pacific	17,171	31.8.39	956,000	+	45,200	34	17,224,000	16,912,200	+	311,800	Ord. Stk.	104	90	86	45½
											87½	41½	6	Nil	—	
India	Assam Bengal	1,329	20.8.39	35,685	-	4,034	20	544,331	530,008	+	14,323	Ord. Stk.	81½	70	62½	41½
	Barsi Light	202	20.8.39	2,340	-	90	20	48,292	60,240	-	11,948	Ord. Sh.	60½	54½	47½	87½
	Bengal & North Western ..	2,112	20.8.39	52,167	+	3,400	20	1,013,797	1,117,503	-	103,706	Ord. Stk.	311	278	242	77½
	Bengal Doonars & Extension	161	20.8.39	4,270	+	284	20	45,361	52,445	-	7,084	"	89	83	87½	77½
	Bengal-Nagpur	3,267	20.8.39	181,575	+	20,607	20	2,984,633	2,695,954	+	288,679	"	95½	90	85½	41½
	Bombay, Baroda & Cl. India	2,984	31.8.39	205,800	+	1,350	22	7,007,550	7,126,650	-	119,100	"	112½	95	97½	61½
	Madras & Southern Mahratta	2,967	20.8.39	129,225	-	5,995	20	2,321,802	2,227,450	+	94,352	"	108	97	95½	77½
	Rohilkund & Kumaon ..	546	20.8.39	21,485	-	1,528	20	207,843	228,987	-	21,144	"	308	285	247	71½
	South Indian	2,531½	20.8.39	101,619	+	625	20	1,623,032	1,609,224	+	13,808	"	104	101	89½	59½
Various	Beira	204	June 1939	83,026	-	—	40	719,357	—	—	—	—	—	—	—	—
	Egyptian Delta	623	10.8.39	5,875	+	486	19	67,548	65,905	+	1,643	Prf. Sh.	7½	5/6	1½	Nil
	Kenya & Uganda	1,625	May 1939	206,557	-	11,295	21	1,220,870	1,309,332	-	88,462	"	—	—	—	—
	Manila		—	—	—	—	—	—	—	—	B. Deb.	49	41	43	8½	
	Midland of W. Australia ..	277	July 1939	11,258	-	1,985	4	11,258	13,243	-	1,985	Inc. Deb.	93½	89	89	41½
	Nigerian	1,900	22.7.39	24,138	-	4,404	17	453,830	509,531	-	55,701	"	—	—	—	—
	Rhodesia	2,442½	June 1939	365,928	-	—	40	3,245,158	—	—	—	—	—	—	—	—
	South Africa	13,284	19.8.39	658,940	+	35,627	21	13,056,722	12,309,656	+	747,066	—	—	—	—	—
Victoria	4,774	June 1939	693,446	-	31,680	52	9,360,329	9,809,155	-	448,829	—	—	—	—	—	

NORW. Yields are based on the approximate current prices and are within a fraction of 1/16

† Receipts are calculated @ 1s. 6d. to the rupee

The variation in Sterling value of the Argentine paper peso has lately been so great that the method of converting the Sterling weekly receipts at the par rate of exchange has proved misleading, the amount being over estimated. The statements are based on the current rates of exchange and not on the par value